

The Mining Journal

AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 577.—Vol. XVI.]

LONDON: SATURDAY, SEPTEMBER 12, 1846.

[PRICE 6D.]

FIFTH AND LAST DAY'S SALE OF HALLENBEAGLE MINE MATERIALS.

MR. TIPPET has received instructions to **OFFER FOR SALE**, BY PUBLIC AUCTION, on Wednesday, the 16th day of September inst., at Ten o'clock in the forenoon, at HALLENBEAGLE MINE, near CHACEWATER, the following very VALUABLE MINING MATERIALS—viz.:
1 STEAM-ENGINE, 66-hp. cylinder (7-ft. 9-in. stroke in shaft), with cast-iron beam, 3 boilers about 42 tons, and the first piece of rod, cylinder and case, brass condensing work (nearly new).
1 WHIM-ENGINE, 16-hp. cylinder (4-ft. stroke in shaft), with boiler, about 7 tons, iron cage, &c.

Capstans and shears, with oak axle; oak axle, with pulleys and sheaves, complete; capstans and cut-head ropes, 14-in. and under; whim ropes and chains of different sizes; several fathoms of pumps, from 19 in. down to 9 in.; working barrels, wind-holes, door and door-pieces, H and top door-pieces, stuffing boxes and glands, plunger poles, &c.; several horse-whims; a great variety of new and old iron, of various sizes; railroad ditto, with saddles and wagons; 2 anvils, 2 vices, several tons of cast-iron, flat and other rods, sheaves, faggotted strapping plates, of various lengths and sizes; iron which, new and old rope, hand-screws, iron and other blocks, machine, horse, and winch kiddles, ladders, air-pipes, beams, scales and weights, dial and stand, a great variety of new and old timber, 3 head-stamps, 22-foot wheel complete.

COUNTING-HOUSE FURNITURE, &c.
The above may be viewed on applying to the agents at the mine; and further particulars obtained on application to Capt. J. Lean, Camborne; or at the office of Mr. Tippet, in Fydar-street, Truro.

TO BE LET, THE PARK-HILL MINES, DEAN FOREST, GLOUCESTERSHIRE—containing ONE MILLION TONS OF COAL, AND ONE MILLION TONS OF IRON ORE, which, being calcareous, smelts well with argillaceous ironstone, and may be delivered in large quantities to the Staffordshire, Shropshire, and Welsh iron-works, at a price far below the cost of local ironstone. The mines are drainable by level, and can be opened at a trifling expense; and, were blast-furnaces erected, their produce might be smelted on the spot into excellent iron.—Apply (post-paid) to Henry H. Fryer, Esq., solicitor, Coleford, Gloucestershire.

CARMARTHENSHIRE—TO BE LET, OR SOLD, several SEAMS OF ANTHRACITE COAL AND IRONSTONE, lying under the farms of Kilfry, New Inn, Foy, and Raeswall, situated in the parishes of Llanelli and Llangenddeirne, in the said county. If desirable, the surface will also be disposed of.—The above property is within a short distance of the Kidwelly Canal, and distant from Pembrey Floating Harbour, eight miles, where the present demand for coal far exceeds the supply.—Further particulars can be obtained on application to Dr. Lawrence, Carmarthen, or to Mr. John Griffiths, Sluch Villa, near Brecon.—July 27, 1846.

THE IRON TRADE—TO CAPITALISTS.—AN ADVANCE OF FIVE THOUSAND OR TEN THOUSAND POUNDS may obtain an EIGHTH, or a QUARTER, SHARE IN AN IRON-WORK, calculated to produce 300 tons of pig-iron per week, at an average profit on all periods of £2 per ton.—Communications to be made to Mr. Weale, bookseller, High Holborn.

TO IRONMASTERS.—A GENTLEMAN, residing at NEW YORK, wishes an AGENCY for the SALE OF BRITISH IRON, of all kinds, having an extensive intercourse with the dealers and consumers, from whom a large amount of orders can be procured. The opportunity is highly favourable; and further particulars can be had on application to "A. B.," Box 94, Post-office, Birmingham.

MANAGER WANTED.—WANTED, IN THE UNITED STATES OF AMERICA, about 100 miles from the city of Philadelphia, a PERSON qualified to SUPERINTEND the OPERATIONS of TWO BLAST-FURNACES, the COMBINATION OF ORES, FLUXES, AND BLAST; and also the working of a SMALL FORGE, REFINING AND PUDDLING, and MAKING RAILROAD IRON.—A man of steady habits could depend on a permanent and respectable situation. The salary will be from \$1000 to \$1200 per year, which may be increased after the first year, if the person is found to give satisfaction. Persons wishing such a situation, may direct letters (per steam-ship, post-paid) to Landley Fisher, Bellevue Post-office, Dauphin County, Pennsylvania, and may expect a reply in the course of two months.—Satisfactory references will be required.—August 14, 1846.

BLACK JACK FOR SALE.—TO BE SOLD, BY TENDER, at NANTERDOW CONSOLS MINES, in the parish of GWITHIAN, about FIFTY TONS OF BLACK JACK, which may be seen, and samples obtained, on application to the agents on the mines.—Tenders for the same, stating the highest price per ton of 21 cwts., taken at the mines, will be received by Mr. G. J. Phillips, Camborne, up to the 14th Sept. next.—Camborne, August 24, 1846.

WANTED, A CRUSHING MILL, with 18 or 24-inch rollers, complete—on the improved principle, and in good repair, with driving gear.—Address, with particulars and price, to Mr. T. Knight, Lion Hotel, Aberystwyth.

STEAM-ENGINE FOR SALE.—A CORNISH ENGINE, of 63-hp. cylinder, together with all the WORKING GEAR, PUMPS, &c., and with or without boilers.—Further particulars may be had of Mr. W. Taylor, C.E., No. 4, Dynevor-place, Swansea.

STEAM-ENGINES.—From 8 to 20-horse power ENGINES ALWAYS IN STOCK.
Apply to Mr. CAPPER, ENGINE-MAKER AND FOUNDER, BIRMINGHAM.
Price.....£14 per horse-power.

IMPORTANT TO ENGINEERS, MANUFACTURERS, RAILWAY AND STEAM-BOAT COMPANIES.
Messrs. W. & C. MATHER beg to call the attention of the ABOVE PARTIES to their IMPROVED ELASTIC METALLIC PISTONS.

The PRINCIPAL FEATURE AND ADVANTAGE OF THIS IMPROVEMENT is—1. Its great ELASTICITY AND SELF-ADJUSTING PROPERTIES, which enable it to yield to any inaccuracy of the cylinder, whether oval or taper, and to move with the least possible friction.

2. Its extreme SIMPLICITY AND LIGHTNESS, consisting of only two pieces of metal, having the vertical and lateral pressure in due and proper proportion, independent of each other.

3. It takes the LEAST possible SPACE, and is well adapted for air and water-pumps, as it allows of a larger water way.

Messrs. W. & C. MATHER feel confident that it is the BEST ELASTIC METALLIC PACKING yet known, for the above reasons.

Models may be seen at the Ralston Iron-Works, Manchester; at W. Barker's, engineers, Newton-Moor; and also at J. Mather's, engineer, Beaufort-street, Chelsea, London.

NOTICE TO THE MANAGERS OF MINING COMPANIES.
SMELTING WORKS, &c.

Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS AND ANALYSES of all descriptions OF ORES, MINERALS, AND FURNACE PRODUCTS, are conducted at his LABORATORY, 33, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.
N.B.—Instruction in all branches of assaying and mineral analysis as usual.

THE PATENT SAFETY FUSE.
FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDIENT MODE of effecting this very hazardous operation. From many testimonials to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Truro, Cornwall.

EMERSON'S PATENT CEMENT PAINT.
PATENT CEMENT AND PAINT MANUFACTORY, AND STEAM-MILLS, 20, CREIGHTON-STREET, LOWER END OF TOWNSEND-STREET, DUBLIN.

The PATENTEE has just completed their arrangements for the introduction of this VALUABLE and ECONOMICAL PAINT. It is perfectly waterproof, and being in a liquid or paste state, may be applied as once from the cask, by any simple workman, with a common paint-brush—thinning it, if so may be requisite, with water.

The surface to which it is to be applied needs no preparation, but to be clean and free from dust. It matters not whether the walls be wet or dry, its adhesiveness being such that it will cling to any surface—brick, stone, slate, tile, or Roman cement, and may be MADE OF ANY TINT OR COLOUR, to suit the taste of the consumer—its present colour being that of a light cream, or stone, colour.

To Roman cement it may be applied the day after it is put on the walls, and one small cask will cover a moderate-sized house.

It is particularly calculated for country houses, villas, &c., from its permanency and pleasing effect; also for lodges and entrances, as it does not absorb moisture; and, consequently, will preserve the walls as effectively as any cement.

FOR ROOFS.—All loose or vegetated mortar should be removed, then apply the paint, with a brush, stopping up all holes or crevices, which will cement the entire roof in one solid mass, so as to render it perfectly impervious to water for many years to come.

Sold at the manufactory, in iron-bound casks, containing 1 cwt., at 6s. 6d.; 2 cwt., 12s.; 3 cwt., 17s. 6d.

N.B.—The paint can be sent by steamers every day, to London, Liverpool, Bristol, or Glasgow, at a trifling expense.

STEAM TO INDIA VIA EGYPT, MALTA, ITALY, ALEXANDRIA, AND THE PENINSULAR PORTS.

PASSAGE TO BOMBAY, MADRAS, AND CALCUTTA.
The Peninsular and Oriental Steam Navigation Company BOOK PASSENGERS for CEYLON, MADRAS, AND CALCUTTA direct, by steamers leaving Southampton on the 20th, and for Alexandria, en route to Bombay, on the 1st of every month.
A steamer from Southampton leaves the 1st and 20th of every month for Malta, whence are steamers to Naples, Genoa, Civita Vecchia, three times a month.
STEAM TO CORUNNA, OPORTO, VIGO, LISBON, CADIZ, AND GIBRALTAR.
A steamer leaves Southampton on the 7th, 17th, and 27th of every month.
Apply at the Peninsular and Oriental Steam Navigation Company's offices, 51, St. Mary Axe, London, where only passages can be secured throughout.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.

CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)
OFFICES—2, MOORGATE-STREET, LONDON.
The directors are now prepared to supply steamship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

BRISTOL AND EXETER RAILWAY.—At the Half-yearly General Meeting of this company, held at the White Lion Hotel, in the city of Bristol, on Thursday, the 3d of September, 1846.

It was resolved unanimously—
1. That the report of the directors, now read, be received and adopted; and that they be requested to send a copy thereof to every registered proprietor.
2. That a dividend of £1 10s. per £100 share, free of income tax, for the half-year ending on the 30th day of June last, be declared payable after the 31st of October now on foot, to the proprietors of all such shares standing registered on the 6th day of the said month of October.
3. That in future the half-years for the dividends shall expire on the 31st of December and the 30th of June; and the dividends shall be payable to those shareholders who may stand registered on the day when the transfer books shall be closed for the respective half-yearly meetings.
4. That this meeting approve the arrangement provisionally made with the Taw Vale Railway and Taw Vale Extension Company, and hereby authorise the directors of this company to take all necessary measures for carrying the same into effect.
5. That the directors be, and they are hereby, fully authorised to order surveys, and to adopt all such other proceedings as they may deem expedient for protecting the interests of this company in any of the districts contiguous to the main line or its branches.
6. That the best thanks of this meeting be given to the auditors for their attention and care in examining the accounts.
7. That the best thanks of this meeting be presented to the directors for the zeal, care, and ability, with which they have conducted the affairs of this company.
The chairman having quitted the chair, it was resolved by acclamation—
8. That the best thanks of this meeting be given to James Gibbs, Esq., for his able and judicious conduct in the chair.

CORNWALL RAILWAY.—Notice is hereby given, that the Act, authorising the construction of this railway, having received the Royal Assent, all persons holding scrip certificates for shares in this company, are requested to transmit the same for registration either to the Secretary, at his office, Truro, or to Wm. Wood, Esq., 449, West Strand, London, on or before Saturday, the 19th of September next, with their names, professions, and residences, distinctly written, in order that the same may be correctly entered in the register of the company. An official receipt will be given for the scrip, which receipt will be afterwards exchanged for the sealed certificates, with as little delay as the preparation of the same may require. Due notice will be given when the sealed certificates will be ready for delivery.

Shares, in respect of which no application for registry shall be made on or before the above date, will be registered in the name of the original subscriber, after which no share can be passed, otherwise than by a formal transfer under the provisions of the Act.
Forms of letters claiming to be registered, may be had at the secretary's office, Truro, or at 449, West Strand, London.
And notice is hereby further given, that interest after the rate of £4 per cent. per annum will be allowed on the deposits paid upon all registered shares from the following times—viz.: from the 1st of December, 1844, on the deposits of £3 per share on £50 shares, and from the 1st of November 1845, on the deposits of £3 per share on £50 shares, and of £2 10s. on £35 shares. The interest will be made up to the 29th of September next, and the interest warrants will be issued soon after the completion of the registration.
By order of the board.
Truro, August 18, 1846. P. P. SMITH, Secretary pro tem.

CALEDONIAN RAILWAY COMPANY.—FIFTH INSTALLMENT.—Notice is hereby given, that the directors of this company have made a CALL for the FIFTH INSTALLMENT of FIVE POUNDS per share, PAYABLE on or before the 30th day of Sept. next, at the offices of the undermentioned company's bankers: LONDON—Messrs. Masterman, Peters, Mildred, Masterman, and Co., 35, Nicholas-lane, Lombard-street. LIVERPOOL—Messrs. Moss and Co. MANCHESTER—Sir Benjamin Heywood, Bart., and Co. EDINBURGH AND GLASGOW—The Commercial Bank of Scotland, and the Edinburgh and Glasgow Bank.

Interest, at the rate of 5 per cent. per annum, will be charged on all calls not paid at that date.
No transfer of shares received at this office after the 3d September will be registered, until the call is paid, as the special notices will be sent to proprietors on the 5th Sept.
J. BUTLER WILLIAMS, Secretary.
Office, 122, Princes-street, Edinburgh, August 26, 1846.

AN EXPOSITION OF THE DANGERS AND DEFICIENCIES OF THE PRESENT SYSTEM OF RAILWAY CONSTRUCTION, with SUGGESTIONS FOR ITS IMPROVEMENT. By C. H. GREENHOW.
John Woole, 59, High Holborn.

Models, illustrating the principle, may be seen at No. 3, Lothbury.

IMPORTANT TO RAILWAY COMPANIES.

PATENT KAMPTULICON COMPANY, 18, CORNHILL.
This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.

By order of the board, F. G. GREVILLE, Secretary.

TO ENGINEERS, RAILWAY CONTRACTORS, MINING AGENTS, IRONMASTERS, AND OTHERS REQUIRING FINE GREASE FOR MACHINERY AND AXLES of every description.—JOSEPH PERCIVAL'S IMPROVED ANTI-FRICTION GREASE is—after trials on machinery and axles of every kind under constant friction is kept up—admitted to be the most useful, economical, and best preparation of the kind ever offered to the public.

References to scientific and practical men can be given, and testimonials shown of the great excellence.—Samples forwarded on application at the manufactory, Green-street, Wellington-street, Blackfriars-road, London.

GREAT BRITAIN MUTUAL LIFE ASSURANCE SOCIETY, 14, WATERLOO-PLACE, LONDON.

THE CHISHOLM, Chairman. WM. MORLEY, Esq., Deputy-Chairman.

HALF CREDIT RATES OF PREMIUM.
The attention of ASSURERS is particularly directed to the Half Credit Rates of Premium, by which means assurances may be effected, and loans for short periods secured with the least possible present outlay, and at a less premium than for short terms only, and with the option of paying up the arrears and interest—thus becoming entitled to participate in the whole of the profit of the institution.

Extract from the Half Credit Rates of Premium.
Age 20. Age 30. Age 40. Age 50. Age 60.
£0 17 0 £1 1 0 £2 1 0 £3 4 2 £4 4 2
Thus £1000 may be assured at the age of 30 by the annual payment of £10 10s. 10d. for the first five years.

The whole of the profits divided ANNUALLY among the members, after payment of five annual premiums.

An ample guaranteed capital, in addition to the fund continually accumulating from premiums, fully sufficient to afford complete security to the policy-holders.

Members assured to the extent of £1000 entitled (after payment of five annual premiums) to attend and vote at all general meetings, which will have the superintendence and control of the funds and affairs of the society.

Full particulars are detailed in the prospectus, which, with every requisite information, may be obtained by application to A. B. IRVINE, Managing Director.

PATENT IMPROVEMENTS IN CHRONOMETERS, WATCHES, AND CLOCKS.—E. J. DENT, 83, Strand, and 33, Cockspur-street watch and clock maker, BY APPOINTMENT, to the Queen and his Royal Highness Prince Albert, begs to acquaint the public, that the manufacture of his chronometers, watches, and clocks, is secured by three separate patents, respectively granted in 1838, 1840, 1842. Silver lever watches, jewelled in four holes, 6 g. each; in gold cases, from £8 to £10 extra. Gold horizontal watches, with gold dial, from 8 g. to 13 g. each. DENT'S PATENT DIPLIDOSCOPIC, or meridian instrument, is now ready for delivery. Pamphlets containing a description and directions for its use is, each, sent to customers gratis.

MINING OFFICES, No. 1, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.

Messrs. WATSON & CUELL have received instructions to PURCHASE SHARES in East Tamar Consols, South Tamar, Copiapo, East Rose, Alten, Stray Park, and Mary Ann Mines; and have FOR SALE, SHARES in all the best DIVIDEND MINES in Cornwall and Devon, paying from 18 to 20 per cent. per annum.

WHEAL CORNWALL: 100 shares. GWINEAR CONSOLS: 256 shares. WEST PROVIDENCE: 236 shares.—(Dividend of £1 10s. per share, now payable.)

MR. R. TREDINNICK will be happy to afford parties every INFORMATION respecting the ABOVE MINES, on personal application at his OFFICE, and proffers his SERVICES to CAPITALISTS and ADVENTURERS in the PURCHASE and DISPOSAL of SHARES of every description.
Mr. TREDINNICK being in constant communication with experienced practical agents in the several mining districts, can, with confidence, recommend to shareholders, desirous of acquiring information from personal inspection of the mines, agents on whose reports every reliance may be placed.

MINING AGENCY OFFICE—THREE KINGS-COURT, LOMBARD-STREET.

THOMAS P. THOMAS, MINE AGENT AND DEALER IN RAILWAY AND OTHER SHARES.
No. 80, OLD BROAD-STREET, LONDON.

T. P. THOMAS, in returning his most grateful thanks to his friends for the support they have given him, begs to assure them, that, from his personal knowledge of the leading mining captains and adventurers in Cornwall and Devon, as well as the principal adventurers in London and in the country, he is enabled at all times to procure the earliest information as to the alterations in the different MINES, and has every facility for the PURCHASE and SALE of SHARES at fair market prices, without advertising what particular shares he is a buyer or seller of—considering such a mode injurious to his principal.
T. P. T. having lately returned from the county of Cornwall, and having personally inspected the underground workings of many of the mines, will be happy to give any information respecting them.

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence. Applications to be made to Mr. JAMES HERRON, mining agent, No. 3, Adam's-court, Broad-street, London.

FRANCIS PRYOR, MINE AND SHARE BROKER.
COMFORD, GWENAP, CORNWALL.

F. P. returns his grateful acknowledgments for the kind and liberal support he has received from gentlemen connected with the mining interest of Cornwall, &c., and begs to announce, that he has now added to the above business, that of AUCTIONEER and APPRAISER, and hopes, by punctuality and strict attention to the interest of those who may entrust him with their favours, to merit support.

N.B.—Mines inspected, and every information given.
One-half the amount advanced on any goods consigned to him for sale, by auction.
Dated Comford, July 22, 1846.

JAMES LANE, MINING SHAREBROKER.
75, OLD BROAD-STREET, LONDON.

JOHN HARVEY, SHAREBROKER AND ASSAYER,
LISKEARD, CORNWALL.

WILLIAM TRENER, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.
OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,
Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices.

43, THREADNEEDLE-STREET, LONDON.

WILLIAM H. SMITH, MINING SHARE AGENT,
10, WARREN-COURT, THROGMORTON-STREET.

SHARES in many valuable MINES FOR SALE, and every information will be afforded, on application.

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c.

TINCROFT MINING COMPANY.—Notice is hereby given, that a QUARTERLY GENERAL MEETING of the shareholders in this company will be HELD on Thursday, the 17th of September next, at 44, Finsbury-square, at Three o'clock precisely.—London, August 26, 1846.

COMBARTIN AND NORTH DEVON LEAD AND SILVER MINES.—At the Annual General Meeting of shareholders, held at Combmartin, on Wednesday, the 19th of August, 1846.

J. G. MAXWELL, Esq., in the chair.

The reports of the directors, auditors, and mining captain, as published in another column, having been read, a full statement of accounts was submitted, when it was resolved unanimously—

Moved by Mr. Wilkey, seconded by Mr. Young, 37
1. That the reports and account-current produced, be received, approved of, and a copy sent to each shareholder.

Moved by Mr. W. H. Thorne, seconded by Mr. Rowe, 37
2. That Messrs. Maxwell, Dovell, and Harris, be requested to accept their reappointment for the ensuing year.

Moved by Mr. Loveday, seconded by Mr. Cole, 37
3. That Messrs. Avery and Cotton be requested to discharge the duty of auditors for the ensuing year. Moved by Mr. Thorne, seconded by Mr. Avery, 37

4. That the thanks of this meeting be given to the chairman, for his able conduct in the chair. J. G. MAXWELL.

LAMHEROEE WHEAL MARIA.—At a Special Meeting of the adventurers, held at the secretary's offices, No. 4, King-street, Cheap-side, on Thursday, the 10th of September, 1846.

PETER DAVEY, Esq., in the chair.

The circular convening the meeting was read by the secretary.

A report of the finance committee to the adventurers, and a balance-sheet of the accounts, were read by the secretary.

The following resolutions were carried unanimously:—

1. That the report and balance-sheet presented to the meeting be received, adopted, printed, and sent by post to each adventurer.

2. That the secretary be instructed to apply personally to the adventurers in arrears of the call of £1 per share, due 6th June and 6th July, to urge immediate payment thereof.

3. That the two-monthly meetings of the adventurers be advertised in the Times and Mining Journal, and a notice sent, by post, to each adventurer, at least 10 days previous to the meeting.

4. That no adventurer be qualified to act as a member of the finance committee who is not a bona fide holder of at least 10 shares in the mine.

5. That Mr. John Edwards, Mr. David Nutt, " Peter Davey, " Henry Smith, " William Morrison, " Thomas Ruston, and Mr. William Pegg,

be re-elected members of the finance committee; and that Mr. John Sunley and Kenneth Kingsford, jun., be elected members of the finance committee.

6. That Capt. Tabb be required to keep a waste-book on the mine, and enter therein all orders given to the purser for materials; that, at the end of every month, Capt. Tabb send to the committee a copy of any orders given during the month; and also inform the committee what materials he will require for the month ensuing; and that a copy of this resolution be forwarded to Capt. Tabb.

7. That a call of £1 per share be now made, payable at such periods, and in such instalments, as the finance committee may direct.

8. That the cordial thanks of the adventurers are due to Peter Davey, Esq., for the benefit their interests have derived from his unremitting and zealous attention to the affairs of the mine.

9. That the cordial thanks of the adventurers are due to the late finance committee, for their valuable and gratuitous services. JAMES CROFTS, Secretary.

4, King-street, Cheap-side, Sept. 10, 1846.

MENDIP HILLS MINING COMPANY.—At the Annual General Meeting of shareholders, held at the offices of the company, 44, Finsbury-square, on Thursday, the 10th day of September, 1846.

EDWARD HARRISON BARWELL, Esq., in the chair.

It was unanimously resolved—

That the report and accounts, now read, be received, adopted, and entered on the minutes.

It was moved by W. Fawcett, Esq., and seconded by A. F. Pearson, Esq., 39
That the shareholders present recommend the directors to call a special general meeting of shareholders, in order to authorise the committee to take (if they think proper) the additional set from Lord Clifton, referred to in their report of this day.—Carried unanimously.

It was moved by P. N. Johnson, Esq., and seconded by W. Fawcett, Esq., 39
That the cordial thanks of this meeting be given to the chairman for his valuable services, and the able manner in which he has presided over the proceedings of this day.—Carried unanimously.—44, Finsbury-square, Sept. 10, 1846.

VENTILATION OF MINES.—In the *Mining Journal* of the 6th of June, we inserted a description of Mr. Struve's mine ventilator, and, in several subsequent numbers, communications thereon: we are glad to find that the invention has attracted some attention, having been before the Institution of Civil Engineers at their late meetings, and a model being deposited at the Polytechnic Institution, where it is daily explained in a simple and popular manner. We have already expressed our opinion of the invention, as being of too much importance to be allowed to "sleep in the chamber of neglect"—too often the lot of many valuable discoveries; but, as any subject connected with the ventilation of mines is interesting, from the numerous accidents we are so frequently obliged to deplore, a brief description of the apparatus here, may be worth the attention of our readers: it consists of a capacious pair of chambers, inserted into large tanks filled with water, forming a water-joint, somewhat after the manner in which the gasometers at the gas-works are constructed; these chambers are suspended in such a way, that a reciprocating motion may be given to them—and are placed in such a position, that a communication is made between them, and the up-cast shaft of the mine; on motion being given to the apparatus, a series of inlet and outlet valves are brought into operation—and are so arranged, that as soon as the chamber begins to descend, the outlet valves open, and the air is ejected, and so on alternately, a continuous circulation is being kept up; the down-cast shaft supplying the necessary quantity of fresh air to the mine, during the extraction of the vitiated atmosphere by the up-cast shaft; the inventor states that a chamber 16 ft. in diameter, with an opening of 50 ft. area, would each minute remove 40,200 cubic feet of foul air—and this, he states, can be accomplished at a very trifling expense of power: if this be so, for the sake of humanity, the utmost consideration should be given to the subject.

GEOLOGY IN DERBYSHIRE.—The Dean of Westminster (Professor Buckland), and Mrs. Buckland, on their return from the late Archaeological meeting at York, paid a visit to Bolsover Castle. The Dean and party examined the limestone quarries in the immediate vicinity; they first collected specimens in the quarry on the top of Bolsover-hill, from which the Duke of Portland permits his tenants to fertilise their lands. The stone lies in three strata—the white, or upper lime, from 3 to 5 ft. thick, contains much dendritic stone, the fine fern-like figures being formed by minute crystals of manganese. This stratum is destitute of animal or vegetable remains. The second stratum of red stone is from 5 to 8 ft. thick, and useful for building purposes. The third, or blue stone, lies from 6 to 14 ft. thick: it is burnt for agriculture, and yields a rich percentage of lime. The next quarry visited was at Bolsover Moor, whence the castle itself is faced. Specimens of this stone were sent to compete for building the new Houses of Parliament; but the expense of carriage prevented further proceedings. The stone presents large close grained surfaces, but the blocks split at intervals, of 2 or 3 in. in thickness, being formed in consecutive layers of carbonized lime, and each layer appears to have been arrested and covered over as it began to crystallize. The crystals worked out would have formed marble. The great value of this celebrated stone consists in its capability of being worked in every direction, and its property of hardening with the weather. It is, therefore, peculiarly adapted to ornamental carving. The party proceeded by Scarcliffe to Hardwick, and the scientific Dean examined the large masses and puny workings which line the road near Hardwick. In one of the latter he observed uneven surfaces resembling the foot prints of birds; and should this idea be confirmed, his visit will probably add a new and important discovery to the facts of ascertained geology. Proceeding on their route, the party next visited the quarry and its crags immediately below Hardwick Hall. From this quarry, the mansion itself was built; and it proved to be one, not of lime, but of sandstone, of a dark grey colour, and a fine granular texture. It was probably used for the eastern part of the facing of Bolsover Castle as well as Hardwick, having evidently been largely worked in the preceding centuries, for the uses of building. It was not, however, of a nature to yield any organic remains. After taking some specimens of this stone, the day was concluded by driving round the park of Hardwick, and observing its large extent, together with the visible decay of its aged timber. The party then returned to Bolsover Castle.

VALUABLE DISCOVERY.—A promising vein of slate, of considerable extent, and first-rate quality, has lately been discovered within a mile of Camelford, on the road to the celebrated Delabole Quarries, being, in all probability, a continuation of the same stratum of rock; and a company is now forming to work it, which will be of great importance to Camelford and its neighbourhood, the quality of the article always commanding a ready sale.

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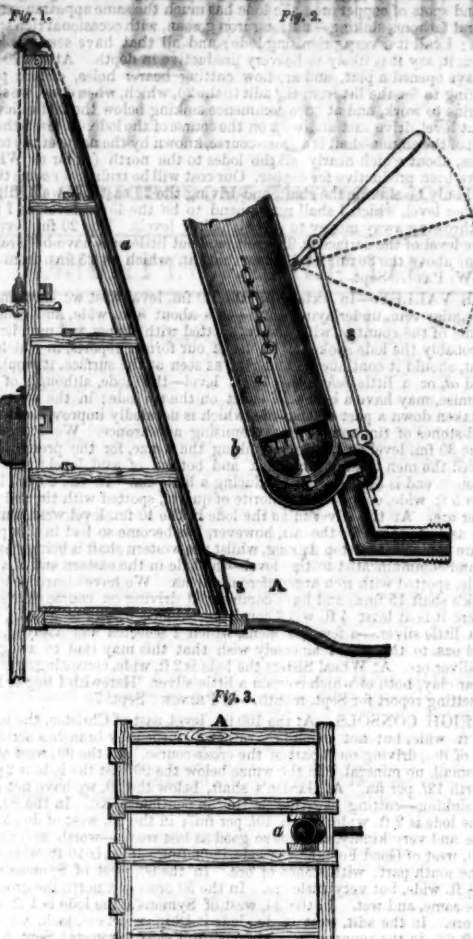
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A SHOCKING SKIN DISEASE CURED BY HOLLOWAY'S OINTMENT AND PILLS.—Mr. Hittinges, a gentleman residing in Arbour-square, Commercial-road, who has been several years in India, where, about seven years ago, he was almost suddenly covered with a dreadful skin disease, resembling lepra, since his return to Europe, has been to the most celebrated waters in Germany, besides trying (without benefit) all other sorts of remedies, both at home and abroad; at last he used ointment and pills, which quickly effected a perfect cure. Any pimples, blotches, or eruptions on the skin, even if of several years' duration, might be eradicated by these fine medicines, which are sold by all dealers in medicine; and at Professor Holloway's establishment, 244, Strand, London.

CLARKE AND VARLEY'S PATENT IMPROVEMENTS IN WORKING PILE ENGINES.



The advantages of this system are—1. Its economy.—2. Its portability.—3. Its slight wear and tear.—4. Its efficiency.

1. Its economy in first expense: being simply the addition of a thin sheet iron tube to the common pile engine, without the crab for raising the weight, as at present in use.—2. Its portability: being no greater weight than a common pile engine and crab, and equally as portable, as the power is communicated by means of a flexible vulcanised India-rubber tube.—3. Its slight wear and tear: the only part subject to wear is simply the leather of the piston, which may be renewed in a few minutes; the cylinder, the longer it is in work the more perfect it becomes.—4. Its efficiency: we propose employing a steam-boiler to exhaust the cylinder in all situations where it is practicable; the air-pump to be worked from the paddle-wheel shafts—the paddle wheels being disconnected. By this means, in driving piles where time is an object, we can raise the monkey in less time than it would fall by gravity—so that, by using a heavy monkey, one pile engine will do as much work as a great many on the present system; also, the same exhausting engine may work a dozen pile engines, if required, at the same time. The pile engine may be worked by a man, or even a boy may attend the slide, and work it with the greatest regularity and facility; any length of stroke may be given, or the monkey may be suspended at any height, if required. To raise the pile into its proper position for driving, the monkey is first to be raised, and secured to the top of the machine; the chain is then to be lowered, and made fast to the top of the pile; the cylinder then will be exhausted, which will raise the pile to the required height, and lower it into its proper place, ready for the next operation. In cofferdams, or situations where water is to be drawn off, we propose to work a portable pump from the same exhausting power, in the same way as our pump for draining mines is worked. Fig. 1, represents a mode of carrying out our invention. A A, frame of a common pile engine; in the centre, behind the two upright standards, is placed a thin metal tube from 12 to 18 inches in diameter; the thickness of metal for a 12-in. tube is $\frac{1}{4}$ of an inch. This tube is placed in an inclined position, as shown in the drawing; the top part of this tube is open; the bottom is closed and connected by means of a sulphurised India-rubber flexible tube, to the exhausting power, which may be any convenient distance away; at the bottom of the cylinder is placed a slide valve, shown in section Fig. 2—the object of this valve is either to open a communication with the cylinder and the atmosphere, or with the cylinder and the exhaustion tube. In this cylinder a light piston works freely, but air-tight; this is fastened to the end of a chain passing over the pulley in the top of the frame as in the common engine; the slide opens the communication with the exhaustion pipe—consequently, the atmosphere acting on the top of the piston, brings it down into the position shown in the drawing, and raises the monkey to the top; the monkey is then disengaged in the usual way, and falls by its own gravity; the slide is then shifted into the position of the lower dotted line, Fig. 2, cutting off the communication with the exhausting tube, and letting in the atmosphere; the counter weight then brings back the piston ready for the next exhaustion or operation. When the lever is in the position shown in the middle dotted line, the weight is then suspended. Fig. 3 is a ground plan of the framing and tube.—CLARKE & VARLEY: Sept. 3.

PROGRESS OF THE ATMOSPHERIC RAILWAY SYSTEM.—We have this week to record two more plans for railways, among the many which have been, and which we expect still will be, brought before the public; the one is by Mr. James Nasmyth, whose many ingenious and important works—such as the steam hammer, pile driver, &c.—we have laid before the public. In the plan before us, the inventor proposes that the tubes should be in sections of (say) one mile in length, and at intervals of one mile; and to each of these one mile sections of tube there should be a piston-rod two miles long, with two pistons in the centre near each other, for facilitating the transit both ways. This rod runs upon guide rollers in the tube, placed at equal distances; each of them is mounted on an axle in the upper ends of pendulous tumbling levers, which hang upon axles, mounted in recesses, below the tube; and at the lower end of each of these pendulous levers there is affixed, by an arm, a plummet, or bob, which, by its gravity, keeps the tumbler erect, and the guide roller under the piston-rod; but, when the piston has to pass any one of these, an inclined plane, in front of the piston, comes in contact with the roller, and throws it and its tumbling lever down the recess, until the two pistons have passed, when the weight of the bob will raise the roller to its place again. The connection of this piston-rod with the train is by an upright arm at each end, to which is attached another rod, or wire rope, the same length as the piston-rod; and thus, on the exhaustion of the tube, on the piston arriving at its end, the front arm of the rod and the train will have arrived at the second section of tube. The other plan mentioned is the invention of Mr. Swinburne, and is something similar to the pneumatic bomb system for letters, proposed some years ago. He proposes to use short lengths of tubes of large diameter; and thus, by using enormous power, propel or shoot off a train with a momentum which shall convey it ten times the distance of the length of the tube, and thus make 10 miles of tube, at equally intervening distances, be sufficient for 100 miles of railway. Instead of a long continuous tube, he employs short tubes, at regular intervals, containing an air-tight piston, to which is attached a flexible rope, or chain, fastened to a frame, which runs between guides, to keep it steady. The arrangement for connection with the train is by a series of bars and catches (which cannot well be ex-

plained without a diagram), which, however, are simple enough in practice. The difficulty to us appears to be, to keep up something like an uniform rate of speed for guiding them properly in the vast distances. In both these plans, the mode of exhaustion proposed is by drawing back the piston to its first starting point by a fixed engine, or other power, and thus obtain nearly a perfect vacuum.

DR. DRAKE'S IGNITION ENGINE.—In the *Mining Journal*, of the 13th June last, we gave a somewhat lengthened account of the invention of Dr. Drake, of Philadelphia—one intended to supersede the use of steam, by producing an equal power at a comparatively merely nominal cost. Its name has been derived from the principle on which it operates—viz., the combustion of a mixture of coal gas and atmospheric air in certain proportions, according to the quality of the gas employed on each side of the piston alternately. We have received a further communication from the inventor, in which he gives us a more detailed statement of the working of his model engine, the power obtained, fuel consumed, and other important points, necessary to be investigated before bringing an invention practically before the public. Dr. Drake estimates his engine, as compared with Mr. Brown's gas engine some years since, as superior as Watt's steam-engine is over Savery's, or Newcomen's, and that the same consumption of fuel, which gave Brown's engine a vacuum of an average of only a few pounds to the inch, yields in his engine a power equal to 10 or 12 atmospheres, or from 150 to 180 lbs. per square inch—in fact, the full power of the explosion, with an effect at least tenfold. In firing a charge of 1 ft. or $\frac{1}{4}$ of a cylinder, 6 ft. long and 16 in. diameter, of a mixture of one part gas and nine parts air, the expansion followed the piston with energy to the end of the stroke, blowing off with a decided puff. Now, by taking the contents of such charge of 1 ft. by 16 in. diameter, $\frac{1}{4}$ only gas, supposing it when fired to produce an average pressure of 50 lbs. to the inch (3d less than estimated by Dr. Arnott) for 5 ft., and giving the engine a speed of 200 ft. per minute, some approximation may be made, as to the amount of power, and at what cost: deducting $\frac{1}{4}$ of the stroke as dead points, or loss, we have a power of near 50 horses during one hour, obtained from the combustion of about 280 cubic feet of gas, and, allowing liberally for wastage, &c., we may claim that power obtained from one bushel of coals—the good gas coal of England furnishing, on an average, 350 cubic feet of gas to the bushel. Another favourable point to be considered is, that the coal gas does not require purification by lime, which, while simplifying the process of manufacture, reduces the cost; and in proper localities it might be manufactured economically, and distributed to various districts and different operatives, as a source of power. The use of such an engine would probably set aside the difficulties attendant on the running of coaches on common roads, and for which there is reasonable encouragement; and as the invention is not one of mere theory, but which has (as we are here informed) been practically demonstrated at much cost of time, labour, and money, and the experiments made on a full size working engine, which with such a power (a 6 ft. cylinder, 16 in. diameter) would be, we think it only requires adequate means and facilities for its introduction into such a country as England, to bring it into extensive use, more particularly in districts where gas is manufactured for lighting.

IMPROVED DOUBLE CYLINDER CONDENSING ENGINE.—Mr. E. Hall, of Dartford, has obtained a patent for a double cylinder condensing engine, which appears a considerable improvement on the ordinary slide valve condensing engines; it is, in fact, the application of an expansion slide valve to one of those engines, to regulate the supply of steam to the cylinders, by admitting it during such part only of the stroke of the small piston, as may be necessary to expand it to the extent desired. The capacity of the two cylinders has hitherto been generally in the ratio of one to four; but, by this arrangement of the expansion slide valve, the steam may be expanded to four, six, or a greater number of times, its original volume previous to being condensed. The arrangements, which could only be shown by diagram, admit the dense steam from the boiler into the small cylinder, which, being interrupted by the expansion valve, the steam expands during the completion of the stroke, and in proportion to the degree of expansion obtained in the small cylinder, is the whole expansion of the steam in the two cylinders determined—that is, if the capacities of the cylinders are as one to four, and the steam is cut off at half stroke in the small one, then the expansion, which in the ordinary mode would only be four times, is doubled, and becomes eight times the volume of the dense steam admitted at each stroke into the small cylinder, and so on in proportion to any other limitation of the supply by the safety valve.

Memoirs of the Geological Survey of Great Britain, and of the Museum of Economic Geology. Published by order of Her Majesty's Treasury. Longman, Brown, Green, and Longman. London, 1846.

We have before us the first volume under the above title, published since the transfer of the Geological Survey from the Ordnance to the Commissioners of Woods and Forests, in April, 1845; and the choice of subjects, the arrangement of their details, and the splendid and highly illustrative manner in which the work is completed, are, we think, a guarantee that the public benefit to be derived from the results of the survey will assuredly lose nothing by the change. We are informed that, as the Geological Survey became that of the United Kingdom, it was considered expedient that, instead of publications by a single individual being occasionally issued, memoirs by different persons engaged on the survey, and contained in one volume, should be substituted, and a vast fund of the most important information on geology and mineralogy will the adoption of such a plan bring together. We have here 10 essays, or memoirs, from the pens of Sir H. T. De la Beche, Andrew C. Ramsay, F.R.S., Edward Forbes, F.R.S., &c., Dr. Lyon Playfair, Warrington Smith, R. Hunt, and others, connected with the survey and other scientific pursuits; illustrated by numerous highly-finished vignette wood-cuts, and several beautifully and carefully coloured geological maps. These memoirs will be divided into two parts—the one under notice for Great Britain, and the other for Ireland—containing such memoirs as the heads of the Museum of Economic Geology in Dublin may consider appropriate. Subjects on the general views of geology have been principally introduced in the present volume; but local descriptions of country will follow, and the first memoir in the next volume, for Great Britain, will be "An elaborate and detailed Description of the Malvern Hills, compared with the Palaeozoic Districts of Aberley," &c., by Professor Phillips. A series of engraved representations of British fossils, illustrative of the researches of the Geological Survey of Great Britain and Ireland, will from time to time be issued, in which it is intended to figure, from as complete materials as can be obtained, the several species in all their modifications of form and structure, and in part accompany the memoirs; of these a number will be given in the next volume, and which will thus form eventually a comprehensive and separate work on British Fossils: notices of the Mining Schools of Hungary, France, &c., and on the iron, steel, coal, and lignite, raised in the latter, with one on the copper and tin raised in Cornwall, by Mr. R. Hunt, and which is published in the *Mining Journal*, close the present volume.

The first memoir in the present volume is from the pen of Sir Henry T. De la Beche, "On the Formation of the Rocks of South Wales and South Western England;" and when we consider the vast mineral wealth contained in this important district, and also that it embraces the Silurian deposits, and the older rocks of the earth in vast accumulations—this paper becomes one of the greatest interest, and the subject is handled by the author in his usual explicit style; he first proceeds to a brief view of the effects of igneous action, and of the deposit of mineral matter, chemically or mechanically, by means of seas, estuaries, and lakes, as at present known—and by comparing such knowledge with geological facts, observed in the district, accounts for them; and shows how far other reasoning may be necessary. He then proceeds to atmospheric influences, and the effects of rain water on rocks, observing that—"Even to depths where the water acquires a heat rendering it capable of effecting a solution of substances, which could not have happened at low temperatures, thus causing the passage of soluble mineral matter from one place to another, cracks and other cavities being filled with the different compounds, bearing various names, and becoming, under favourable circumstances, crystallised. Hard rocks are decomposed in one place, and the matter which they have lost consolidates beds of loose materials in another, so that we may consider the compound parts of a large amount of rocks as silent and slowly moving from one place to another during the lapse of time; new dislocations in the surface of the earth, and the protrusion of igneous products of various kinds through that surface, greatly aiding in the chemical change to which so many masses of rock are subjected." The above will give an idea of the style employed; but the memoir extending over 296 pages, we must reserve further extracts for a future Number. No. 2 is a paper "On the Denudation of South Wales and South Western England," by A. C. Ramsay, F.R.S., director of the Geological Survey. No. 3, "On the Connection between the Fauna and Flora of the British Isles," by E. Forbes, F.R.S., &c., paleontologist to the Survey. No. 4, "Remarks on the Influence of Magnetism and Voltaic Electricity on Crystallisation, and other Conditions of Matter," by R. Hunt, keeper of mining records. No. 5, "On Gases evolved during the Formation of Coal," by Dr. Lyon Playfair. No. 6, "Note on the Gypsum Mine, Pampant, Carmarthenshire," by Warrington Smith, M.A., and the four papers, before mentioned, close the first volume, extending to 531 pages. Upon the whole, the work does infinite credit to the parties engaged, and must, when further developed, prove of great interest to the geological public. We shall largely extract from it in successive Numbers.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The lode in the 24 fm. level is without alteration. The 18 fm. level end, west of flat-rod shaft, looks much the same; lode producing about 2 tons per fm.; the western winze, under the 12 fm. level, is through the lode; the lode in the end, west of Nangle's shaft, produces about 2 tons per fm.; the end east of the shaft is producing about half a ton per fm. The following is a list of our prices for September month:—24 fm. level end west, 5l. 10s. per fm. (six men); rise in the back of ditto, 5l. 10s. per fm. (two men); 18 fm. level end west, 6l. per fm. (six men); winze sinking under the 12 fm. level, 4l. 10s. per fm. (six men); ditto, under the 18 fm. level (east and west of flat-rod shaft), 5l. per fm. each (six men); adit end east, 1l. 5s. per fm. (two men); end west of Nangle's shaft, 2l. 10s. per fm. (six men); end east of ditto, 1l. 10s. per fm. (four men); sinking new surface shaft, north of Nangle's shaft, 2l. 10s. per fm. (six men); Clon Mines, adit end, 1l. per fm. (four men); tributaries, about 30 men—prices from 4l. to 5l. per ton. We shall commence to drive at the 28 fm. level flat-rod shaft very shortly.—T. ASKOVE: Sept. 4.

BEDFORD UNITED.—At Wheal Marquis, the lode in the 80 fm. level east is 2 ft. wide, spar, mudiic, and ore. In the 70 fm. level east the lode is 2 ft. wide, saving work; the lode in the stopes, in the bottom of this level, is 18 in. wide, and worth 15l. per fm. At Ding Dong, the lode in the 24 fm. level west is 2 1/2 ft. wide, composed of spar and peach, with spots of tin in places. At Wheal Tavistock, the lode in Phillips's engine-shaft is 2 ft. wide, composed of spar, mudiic, and ore. The lode in the 47 fm. level west is 2 ft. wide, producing some good saving work. The lode in the 35 fm. level east is 2 1/2 ft. wide, composed of spar, mudiic, and ore, altogether very kindly. The lode in the south engine-shaft is upwards of 6 ft. wide, composed of gossan, iron, spar, and ore. In the adit level east the lode is 2 ft. wide, composed of gossan and spar, with stones of ore in places.—JAMES PHILLIPS: Sept. 8.

CALLINGTON.—In the 112 fm. level, driving north of Johnson's engine-shaft, we are opening tribute ground; in the south end the lode is producing silver-lead ores. In the 100 fm. level north no lode taken down, being hove by a small cross branch; in the south end we are driving through ground that will pay for working at 10s. in the 1l. In the 90 fm. level north the lode is 10 in. big, intermixed with silver-lead ores. In the 80 fm. level north the lode has not been taken down. At the north mine, in the 90 fm. level north the lode has not been taken down; in the south end we are opening tribute ground. In the 80 fm. level, both north and south, the lode is producing silver-lead ores. At the Kelly Bray the lode we are sinking on is from 3 to 4 ft. big, composed of the most promising gossan and quartz, intermixed with mudiic, situated in a very soft and congenial channel of ground—we are sinking on this lode with 4 men, at the same time are following it on the back.—J. T. PHILLIPS: Sept. 7.

CARADON WHEAL HOOPER.—Since my last the shaftmen have cut ground for cistern, and fixed the lift in it; sunk 2 fms. in the shaft, and are sinking 5 ft. per week, which will enable us to get to the 40 in about 11 or 12 weeks from this date; price for sinking, 14l. per fm. The lode in the 30 end east is 5 ft. 6 in. wide—a very strong lode, indeed, composed principally of spar, quartz, mudiic, peach, and some fine spots of copper, letting out much water; if we had no other lode in the set, this is sufficient to warrant extensive outlay to develop the resources of it at deeper levels; the cross-cut shaft is extended 15 fms. from shaft, price for driving, 3l. 5s. per fm.; ditto north 12 fms., price for driving, 4l. 5s.; the improvement made in Wheal Agar greatly increases the value of this set, the same lode running through the centre, which is full 5 ft. wide, and a good course of ore.—JOHN SEYMOUR: Sept. 9.

CUBERT SILVER-LEAD.—The ground in the engine-shaft continues rather hard. The lode in the 25 fm. level, going east, is 12 in. wide, and worth half a ton of ore per fm.; going west, the lode much improved—this week worth half a ton of lead per fm. At the 15 fm. level east the lode is 2 ft. wide, kindly, with rich stones of lead; west, very promising; the lode is 1 ft. wide, yielding about half a ton of ore per fm. Nothing new in the pitches since the setting.—R. ROWE: Sept. 4.

EAST TAMAR CONSOLS.—At Whitson, we have nearly completed our work down from the 46 fm. level to the 54, at Hitchins's shaft, where we intend to commence driving the cross-cut, to cut the lode at this level as soon as possible. In the 46 fm. level, south of Hitchins's shaft, the lode is 2 ft. wide, still improving, producing good stones of silver-lead ore. The 46 and 36 fm. levels north are still in slidy ground; we hope to have a change in the course of this week, as the indications appear favourable. At Furzehill, Harrison's shaft is sunk 5 fms. 4 ft. below the 30 fm. level; the lode is 2 ft. wide, producing good work. In the 30 fm. level, south of Harrison's shaft, the lode is 3 ft. wide, very good work. I am happy to say, our tribute department is still improving. Since our last report, we have shipped 295 tons fluor spar, and on Wednesday next we intend to sample 40 tons of silver-lead ore for Aug. month.—B. ROBERTS.

GUNNIS LAKE.—I beg to inform you, that Bailey's engine-shaft is 12 fms. 2 ft. 6 in. under the adit level—lode 2 1/2 ft. wide, principally gossan, with stones of grey ore occasionally. The sumpmen are now employed cutting plat, as also is there another part of 6 men commenced driving the 12 fm. level west.—W. RICHARDS: Sept. 8.

HAWKMOOR.—In the 15 fm. level, east of Hitchins's shaft, the lode is 3 ft. wide, composed of capel, spar, mudiic, and good stones of ore.—P. RICHARDS.

HOLMBUSH.—I beg to inform you, we have commenced cutting a trip plat at Hitchins's shaft, in the 120 fm. level, and have also set the price of ground now standing to the south of the sump winze, from the 110 to the 120 fm. level, to stop down at 9s. in 20s. tribute. After we have completed this work, we purpose fixing 8 in. rods to the bob at the 90, in the diagonal shaft, and to sink on the course of the lode from the bottom of the 120 fm. level, instead of sinking Hitchins's perpendicular shaft, and extending these long and tedious cross-cuts. The ground in the 120 fm. level, south of Hitchins's shaft, is still favourable for driving—being set at 7l. 10s. per fathom; in the same level, driving east, the lode is 12 in. wide, and worth 6l. per fm.; ground much softer—being set at 7l. 10s. per fm.; we have resumed driving the 120 fm. level, west from the bottom of the winze, the lode in which is 12 in. wide, producing very good stones of ore, and ground moderate—set at 7l. per fm.; there is 11 fms. of ground between the both levels to drive to effect a communication. We are still engaged clearing out the 110 fm. level, east of Hitchins's shaft, on the south part, which is full of attle; in the 110 fm. level, west of Hitchins's shaft, on the north part, the lode is 10 in. wide, composed of mudiic and spots of ore; in the same level, driving south on the lead lode—or, rather, the flookan part of the lead lode—the ground is very soft, being set to drive at 2l. per fm.; and should the ground continue soft, we hope to reach the copper lode, which is hove south by the lead lode, combined by a cross-course, this month; after which, we shall then cut through the lead part, or course, which is standing 6 ft. to the east of the flookan part; we now drive on the flookan part of the lode for speed, and to drain the ground. The lode in the winze, sinking below the 100 fm. level, on the north part, is 10 in. wide, and worth 10l. per fm.; here we hope to communicate to the 110 fm. level west in the course of the month; in the same level, driving north, the lead lode is 2 1/2 ft. wide, composed of flookan, spar, and stones of lead; the lode in the rise, in the back of the 100 fm. level, is 4 ft. wide, composed of flookan, spar, and stones of lead; the two pitches, in the back of this level, are producing some very good lead. We have removed the men that were sinking a winze below the 90 fm. level, on the lead lode, to the 110 south, leaving the risemen to effect a communication to this level, which can be done at a less price. We are now engaged in dressing the lode, and hope to have against another sampling about 15 tons of very good lead ore for sale.—W. LEAN: Sept. 8.

KIRKCUDBRIGHTSHIRE.—In sinking Stewart's shaft, the lead continues much the same as before reported; the lode in the end driving east, is large, producing about 1/2 ton per fm.; in the end driving west, the lode is also large, and has a very promising appearance; but not producing so much lead as it has been yielding—now about 1/2 ton per fm.—the length of lead ground through which we have driven from end to end is about 12 fms. I regret to state, however, that this part of our operations has suffered some delay in the past week, for want of ventilation; but this will be immediately remedied by an air-machine we are fixing; some delay has also been occasioned in the dressing for want of sieves, which has not arrived as expected.—J. BUZZO: Sept. 7.

LEWIS.—At Wheal Nutt engine-shaft, the lode in the 60 fm. level end east is 2 1/2 ft. wide, worth 60s. per fm. for tin; the lode in the 60 west is 2 1/2 ft. wide, 8 inches of the same is a good branch of black, only discovered yesterday. The lode in the 50 east is 2 ft. wide, worth 40s. per fm. for tin; the lode in the 50 west is 3 ft. wide, producing some tin, and very promising. The lode in the 40 fm. level end east is 2 ft. wide, worth 40s. per fm. for tin. The lode in the 30 end east, on south branch, is producing some tin, set at 15s. per fm., and 11s. tribute. We are also continuing to drive south at the 30 fm. level, from Oak shaft, ground favourable. Scadden lode, west of the cross-cut, at the 20 fm. level, is small and disordered at present. The tributaries in the back over are making fair wages at 10s. in the 1l. for saving the copper ore; we are still continuing to drive the cross-cut north at this level, to intersect the lode in Bush shaft, ground soft. The lode in a winze, sinking under adit, at Bosworgie Town lode, is 18 in. wide, producing some good work for tin, and very promising. The lode in Bush shaft is 15 in. wide, worth 60s. per fm., and very kindly.—SAMUEL S. NOKLE: Sept. 6.

MENDIP HILLS.—In the 25 fm. level, driving north of Barwell's shaft on Stainsby's lode, the lode is 6 feet wide, composed of carbonate of lime, favourable for driving. In the 20 fm. level, north of Somers's shaft, no alteration has taken place since my last; I cannot give you a correct statement as to the lode in this end, as we have not cut through it for several fms. past. In the 20 fm. cross-cut, driving west of new shaft, the ground continues very hard for driving. At Stainsby's shaft the lode continues quite as large as last reported on, with a very promising appearance; the men are getting on well with their bargain.—F. C. HARRIS: Sept. 7.

SOUTH DOLCOATH.—I have not given you regular reports of the operations in this mine, on account of having so little to report on hitherto. Since

clearing the adit, clearing and securing the adit shaft, &c., we have been sinking the engine-shaft below the adit till now—we have reached the 20 fm. level. The lode in the shaft, from the adit, has been large, composed chiefly of gossan, soft spar, and spots of copper ore; the lode has much the same appearance now as for several fathoms sinking—a strong iron gossan, with occasional rich spots of grey ore; I call it a very promising lode; and all that have seen the lead of stuff from it, say it is likely to be very productive in depth. At the 20 fm. level we have opened a plat, and are now cutting bearer holes, cistern plat, &c., preparing to fix the lift from the adit to the 20, which, when done, we shall set the engine to work, and at once commence sinking below the 20 fm. level; and, at that level, drive east and west on the course of the lode. A few fathoms to the west of the engine-shaft is a cross-course, known by the name of the main cross-course, about which nearly all the lodes to the north (so far as Wheal Seton) have been productive for copper. Our cost will be trifling for some time, as we shall only be sinking the shaft, and driving the 20 east and west, till we reach another level, which I shall recommend to be the 40 fm. level, as I fear it will be throwing away money to drive shallow levels. The 20 fm. level is only to the level of the surface at Tincroft, and but little ore has been raised in this mine above the 30 fm. level below the adit, which is 25 fms. from the surface.—W. PAUL: Sept. 7.

SILVER VALLEY.—In extending the 40 fm. level west we have intersected a regular vein, underlying south—it is about 8 in. wide, and consists of fragments of the country, with quartz, spotted with copper and mudiic; it is most probably the lode spoken of in one of our former reports, in which we stated that, should it continue its underlie, as seen at the surface, it would be intersected at, or a little below, the 40 fm. level—this lode, although of not great promise, may have a beneficial effect on the tin lode; in the west end, we have taken down a part of the lode, which is decidedly improved—it contains good stones of tin, and wears a promising appearance. We have suspended the 30 fm. level east, as also sinking the winze, for the present, and have placed the men to stop the back and bottom of said level; the lode in the western end is 3 1/2 feet wide, producing a little tin. In the 20 fm. level the lode is 5 ft. wide, composed of chlorite of quartz, spotted with tin and yellow copper ore. At the silver mine the lode in the 10 fm. level west is much the same as last reported; the air, however, has become so bad in this place that we are compelled to stop driving, whilst the western shaft is being cleared, secured, and communicated to the level—the lode in the eastern end is about 3 feet wide, spotted with rich argentiferous galena. We have cleared and secured Oak's shaft 15 fms., and have commenced driving on course of the lode west, where it is at least 4 ft. wide, consisting almost wholly of gossan, containing a little silver—a few specimens, which I selected and assayed, produced 124 ozs. to the ton; I sincerely wish that this may lead to a regular, shoo of silver ore. At Wheal Sisters the lode is 2 ft. wide, consisting of gossan and felspar clay, both of which contain a little silver. Herewith I beg to hand you our setting report for Sept. month.—J. PRINCE: Sept. 7.

TRELEIGH CONSOLS.—At the 100 fm. level, east of Christie, the lode is about 2 1/2 ft. wide, but not much ore, rather disturbed by branches across it; 100 west of do., driving on a part of the cross-course. In the 90, west of do., the lode small, no mineral. In the winze below the 90 east the lode is 2 1/2 feet wide, worth 12l. per fm. At Garden's shaft, below the 90, we have not commenced sinking—cutting plat, and putting in penthouse, &c. In the 90, east of do., the lode is 2 ft. wide, worth 10l. per fm.; in the 90, west of do., lode is 3 ft. wide, and very kindly, but not so good as last week—worth 20l. per fm. In the 70, west of Good Fortune, the lode, including capels, is 10 ft. wide, driving on the south part, with stones of ore. In the 60, west of Symons's, the lode is 2 1/2 ft. wide, but very little ore. In the 50 cross-cut north the ground is much the same, and wet. In the 34, west of Symons's, the lode is 1 ft. wide, without ore. In the adit, west of do., lode is 18 in. wide, ore, jack, &c. The west shaft do., in the country, ground favourable.—W. SYMONS: Sept. 5.

UNITED HILLS.—At the 90 fm. level, in the eastern end, the lode is 3 ft. wide, 1 ft. ore of fair quality; in the western end the lode is 3 1/2 ft. wide, 2 ft. good ore. At the 80 fm. level, in the eastern end, the lode is 3 ft. wide, producing but a small quantity of ore; in the stopes, east of Williams's shaft, the lode is 4 ft. wide, 2 1/2 ft. ore of good quality. At the 70 fm. level, in the eastern end, the lode is 2 ft. wide, 1 ft. good ore—improved since last reported; west of James's shaft we are still driving north. In the 60 fm. level the lode is 3 1/2 ft. wide, producing but little ore. In the 50 fm. level no alteration since last week; the shallow adit lode is 4 ft. wide, 18 in. ore of average quality. At Wheal Charles, in the 50 fm. level, the lode is 2 ft. wide, producing ore of low quality. In the 40 fm. level the lode is 3 ft. wide, 18 in. ore of fair quality. At Wheal Sparrow, in the 40 fm. level, the lode is 1 ft. wide—poor. In the 30 fm. level, east of the winze, the lode is 1 ft. wide, coarse in quality; west of Turner's shaft, the lode is 2 1/2 ft. wide, 18 in. ore of fair quality.—THOMAS TREVENEN; ROBERT WILLIAMS: Sept. 8.

WEST WHEAL JEWEL.—In the 115 fm. level east, on Wheal Jewel lode, the lode is 16 in. wide, producing some good stones of yellow ore—drove last month 2 fms. 2 ft. In the 100 do. east, on the same lode, the lode is 2 1/2 ft. wide, worth 5l. per fm.—drove last month 3 ft. In the 100 do. west, on the same lode, the lode is 9 in. wide, unproductive ground, very hard for driving—drove 2 fms. 1 ft. 6 in.; suspended until the bottom of the 85 be worked by the tributaries, who have been taken to prove the lode, where it does hold down in this level. In the 85 do., on the same lode, the lode 2 ft. wide, worth 4l. per fm.—drove last month 2 fms. 5 ft. In the 12 west, on Tolcarne tin lode, the lode is 2 ft. wide, worth 28l. per fm.—drove last month 3 fms. 1 ft. 1 in. In the 12 do. east, on the same lode, the lode is 3 ft. wide, worth 4l. per fm.—drove last month 2 fms. 4 feet; this level is suspended to sink a winze in the bottom of the same, to cut out tribute ground—drove during last month 2 fathoms 3 feet. The winze in the bottom of the deep adit, west of Quarry-shaft lode, the lode is 3 feet wide, worth 8l. per fathom—sunk last month 1 fathom 2 feet. In the 70 east, on Wheal Jewel lode, drove 1 fm. 5 ft. 7 in. The winze west of old sump shaft, in the bottom of the deep adit, worth 5l. per fm.—sunk last month 1 fm. 5 ft. 6 in.—R. JOHNS: Sept. 7.

WHEAL BENNY.—I am happy to say we have completed the engine-shaft and every thing in course, preparatory to sinking. I find that a cross-cut has been driven south 6 ft., where they took the lode, and drove on its course 9 fms. west and 7 fms. east—the average size of the lode being 2 1/2 ft. big, composed of gossan, copper, mudiic, and spar. That part of the lode we have taken down is good saving work. The dressing-floors are nearly completed, and we hope to commence dressing in another week.—T. M. PENALUNA.

WHEAL CONCORD.—I beg to inform you that, having cleared the stuff from the 50, the ends east and west have been set to drive on the course of the lode, which has been opened on by the former company 1 fm. east and 7 ft. west. The lode, as far as it has been driven on in this level, is 2 ft. wide, quartz and peach, with a large proportion of mudiic in a strata of blue killas north, and white, south, rather harder than in the upper levels. In the 38 fm. level the lode is still 3 1/2 ft. wide, of a similar character to that in the level described. This level is also in course of being cleared west, and, as soon as it can be completed, you shall be made acquainted with the nature of the lode in the end, which is of good width, in that part of the level that has been cleared. In the 28 fm. level east the men have made but slow progress, in consequence of the difficulties they had to contend with in clearing through the old workings. It is probable, however, they will proceed with more dispatch in future; in the same level west the lode is 3 ft. wide, of a very promising character. We have got on rapidly in clearing the 20 fm. level east, and expect the end is very near. The lode in the 10 fm. level, east from Arnold's shaft, is 2 ft. wide, but not quite so good as when I last wrote you, having been a little disordered by a slide. We expect to hole here to the level coming towards it from Snell's shaft during this week, which every exertion has been made to accomplish; immediately this is done, we propose to commence stopping the back and sinking a winze in the bottom of the level, through the course of lead now being driven, which, it is anticipated, will materially increase our returns, as well as lay the bottom open, to facilitate our future operations. I calculate to raise about 15 tons per month; this, however, you are aware, will depend entirely how the lode may prove when taken away, and what discoveries may be made in other parts of the mine.—J. B. CLYMO: Sept. 9.

WHEAL LOUISA.—The engine-shaft is down 15 fms., the ground holds its former improved character—a very pretty light blue killas, congenial for lead. I would strongly recommend working upon the south part of the mine, on Hewas Consols, and Wheal Arose lodes, and I think you would get remunerated for your outlay in a very short time.—JAMES CHRYNOWETH: Sept. 10.

FOREIGN MINES.

ALTEN MINES.—The following is the mine report from 1st to 20th Aug.: *Raipas.*—The favourable prospects on Labonchere's lode continue to hold out the best hopes of ultimate success; and although the ore returns will not immediately experience an increase, we expect that the quality will be improved by the pills and best dredge produced from this part of the mine. The other workings are making the usual regular returns, and we are now busily engaged in bringing the summer's produce to the smelting-house. The pills and best dredge being subject to a different treatment in the smelting operations, will not appear in the delivery notes before the close of next month.

United Mines.—The stopes continue to yield the usual regular returns, and the prospects are still favourable.

Old Mine.—Our operations are still confined to returning the large heap of halvans through the stamps; but in consequence of the scarcity of water, our progress has been comparatively slow. The dredge is returned to the smelting-house, and we expect to deliver a still larger parcel of ore before the close of the year.

Mancur's.—The lode in the south level is more collected and regular, and the quantity of ore appears to make a slow but regular increase—the ground, and all the workings, are hard, and unfavourable for working; but I expect the returns, with the present reduced number of bargains, will be equal to, if not exceed those of, last month.

Ryper's.—The lode in the new level is again poor and unproductive, but the

stopes continue to yield fair returns. The summer's produce is now in course of delivery to the smelting-house, and will appear in the next delivery note.

New Lodes.—One of the workings is making a tolerably good return of superior quality ore; the new levels are poor, and towards the north-west, where the lode has apparently been intersected by a stratum of slate, and much disordered, we have for a time suspended operations. The lode in the south level is regular, and appears to improve as we advance into the mountain. The prospect of the several discoveries are not, on the whole, deteriorated.

Ore Dressing.—The dry weather we have lately had causes a great scarcity of water to the machines, and has sadly thrown us back in the returns; and unless a change shortly takes place, we can scarcely expect more than 25 or 30 tons of dressed ore from the stamps by the end of next month. Only four heads can be worked by day and 8 by night, instead of 24, as formerly. Mancur and the Old Mine ores appear in the accompanying delivery note. By the end of September the whole of the stock of ore will be delivered to the smelting-house; and judging from the past deliveries, the returns will be found to exceed the estimates by about three or four tons of copper.—S. H. THOMAS.

ANGLO-MEXICAN MINES.—*Guanajuato, July 24.*—*Anuncio.*—The intelligence I have to convey is somewhat better than last month—still, I do not write with any degree of confidence, as I have not yet visited the mine, in consequence of Mr. Parkman being indisposed on the day I had fixed to examine the workings with him; and the past month has been one of such complete and intense occupation with me, that I was unable to apportion another day for the purpose; but, now that the dispatches have left this city for the coast, I will go up and give all the circumstances of the mine a close and deliberate examination. In the meantime, I proceed to convey to the board the results of the past month:

Week ending	Memoria.	Saldo.	Profit.	Loss.
June 27	\$ 637 7 3	\$ 1139 4 0	.....	\$ 501 6 7
July 4	549 2 9	1077 2 0	.....	10 5 9
11	174 0 8	1441 2 0	.....	5 46 4
18	652 3 9	1994 3 0	.....	339 5 9
			\$386 2 1	\$98 7 0
			98 7 0	

Profit in the four weeks \$ 287 3 1

Total number of cargoes sold 696, at the average price of \$8 1-7 per carga, so that it appears the ores gradually increase in value, but the competition in the sales is sadly fallen off, which is, in some degree, to be attributed to the excessively wet weather now prevalent; but, I may say, principally to the madness which has seized all the rescatadores to buy at La Luz. We should now be \$100 better but for an accident which happened to one of the workmen, which occasioned an expense, for medical attendance, of \$100.

Sirena.—The month ending the 20th June resulted in a profit to the company of \$81 2, which, together with the rent of \$40, has been accounted for.

Finance.—Inclosed is customary documents, showing an asset of \$73,909 6 9.

BOLANOS MINES.—*San Clemente, July 15.*—Since my respects of the 17th ult., I am in receipt of your favour of 1st May.

Zacatecas District Mine Report.

SAN CLEMENTE SETTS.—The produce of these mines has continued to decline in quality and quantity. We have had fewer hands at work, and there is a less field for their exertions: this deficiency of ore from underground has been partly compensated by picking over the attle heap, where we have about 40 hands employed, at partido of one-third. The quantity of ore procured from this source averages about 40 cargoes weekly. The bargain in the west end of La Luz continues barren and unpromising; a trial was made, for two weeks, on a branch discovered by the bucones, running off in the south-east direction from the San Nicolas cross-cut, on San Francisco level, but the lode disappeared, and the trial was abandoned.

SAN FRANCISCO DE PAULO MINES.—During the past month some good ore was met with in the east end of San Bonifacio, which has been dwelt upon by the bucones, but it has now nearly disappeared. The west end of San Miguel has become quite barren; in the winze of San Miguel, the ore on which we commenced sinking, has become very poor, and we have come to the water level, which will now prevent our further sinking, till it is drained by our lower cross-cut; the east end of our second level is driving in whole ground, without ore. The cross-cut south from San Bonifacio, to communicate with the whole workings in Rayas, in the rises of the second level, has been driving through the lode without cutting ore; the sinking of the shaft has been slow—from 1 vara to 1 1/2—the rock being very hard. Cross-cut No. 3 has advanced 1 1/2 to 2 varas weekly, and yesterday we cut the Veta Bella lode; and I must refer to a post-script for a report upon it, as it is not yet sufficiently seen.

CELESTINA MINE.—*Tutucos on Ore.*—Winzes Nos. 3 and 4, and rise No. 2, on Mayorazgo lode, have been tolerably productive, and left a surplus above their costs; but winze No. 4, and the rise, are suspended this week, on account of the ore immediately in sight having become too narrow. A new rise, No. 3, has been commenced on a wide vein of good ore; and winze No. 3 continues, so that I hope to keep up the extractions of ore. *Tutucos of Discovery, &c.*—The north end of Mayorazgo has been throughout the month in good and plentiful ore; but this week it has fallen off, and the rock has become very hard, so that I fear little assistance is to be expected from this work for the present. The winze, No. 1, has communicated with the rise from the 64 vara level, thereby opening a good footway to the latter. The winze of Celestina reached the 64 vara level, and the bargain was turned westward, and has driven about 8 varas in this direction; but, owing to the quickness of the water, and the foulness of the air, this work has been suspended—it had never been without ores. An end east has been opened from the winze, No. 1, on Mayorazgo lode, called El Entresuelo, at about half the distance between the adit level and the 64 vara; it commenced on a narrow vein of very rich ore, which is still produced only in small bunches; this end will be continued for discovery into the Celestina lode; in the Celestina winze, at the same level, there is good ore likewise. *North cross-cut, 64 vara level,* has cut into a wide lode underlying south—different in its underlie and its course from that which we seek, called El Principe; it shows no metallic signs, except scattered pyrites; the cross-cut is still continued in it: as soon as it is sufficiently opened to work it on partido, the mine will very soon pay off its debt, and leave profit. A torta, now in the patio, assays 16 mcs. per monton; this improvement has been obtained by more care and knowledge in cleansing the ore.

CERRO DEL BOTE MINE.—This mine has continued in a very flourishing state since the ventilation was obtained; the carga raised has increased gradually from 1000 to 1500 per week—all of which has been broken by 20 parados by day and as many by night; six more parados are gone down this week, and they will, no doubt, break a proportionable increase of carga. The leys are also maintained—the *grueso* common assays an average of 8 mcs. per monton; the granza and sierra, I believe, yield only 4 or 5 mcs. per monton, which reduces the general average to a little more than 6 mcs. All the respectable haciendas of Zacatecas are employed with maquila from the Bote; and as, in the Granza, we have not ores enough of our own to keep it in full work, I have taken about 200 cargoes weekly from M. Placci, at \$17 maquila per monton.

P.S.—July 19.—The cross-cut, No. 3, from San Francisco shaft, has got about a vara into the Veta Bella lode, in which a vein of very good ore has been cut, extending through the roof, the two sides, and the bottom of our workings, of about 6 in. width; this ore is, no doubt, the continuation of what we have in Buen Suceso, and our other workings under water, and affords a promise of formality in the vein, which is very satisfactory, although it is too narrow to warrant the expectation of large profit.

Statement showing the General Results of the Mines and Haciendas for June:—

Mines.	Profit.	Loss.
San Clemente Mine	\$1530 0 1	.....
San Nicolas	5233 5 7	.....
Malancho	1329 2 2	.....
San Rafael	.....	\$4425 4 2
Veta Bella	26 1 6	.....
Loreto	.....	46 3 5
Celestina	.....	1113 1 4
Disputed ground	.....	56 1 7
Haciendas	2474 7 0	.....
	\$10,594 1 0	\$5646 3 2
Loss	5,646 3 2	
Profit	\$4,947 8 6	

N.B.—Sept. 7.—The directors have learned, by a subsequent communication, that the Cerro del Bote negotiation would be transferred to the company from the beginning of August.

PACHUCA MINES.—*July 28.*—*Rejona.*—In the 60 vara cross-cut, south of San Miguel shaft, we have met with a narrow branch of quetzamoz and red flookan, 6 in. wide, but poor. This, however, is not the part of the lode which the cross-cut is intended to intersect—that being still farther south. The 29 vara cross-cut has cut the lode at about 5 varas; but that part appears to have a faster underlay south than the other; we shall, therefore, probably have to drive 8 or 9 varas—it is now driven 5 1/2 varas. We have resumed the sinking of the San Miguel shaft, where the lode is composed of quetzamoz and gossan—the assays from which mixed together give from 3 to 4 and even 5 mcs. per monton—but this ley is too low to pay for returning; at the same time, it cannot be denied it is a promising trial.

Esperanza.—The lode in the San Buenaventura (95 vara level) is again very wide and soft. I should say, that the indications here are promising, had we not been so often disappointed, as the vein is producing kindly stones of ore, but not in sufficient quantity to save much. Capt. Trencar recommends a cross-cut being driven south from the 95 vara level, west of San Buenaventura, for the object of intersecting the Grande vein. He has been led to recommend this work from seeing that La Grande Mine is giving good azogue ore, which is being extracted from the western part, and within a comparatively short distance of our boundary. Before determining anything in this matter, I purpose making another careful examination of the direction of the Grande vein.

Guadalupe and Santa Clara.—In San Pedro shaft, we met with a narrow

branch of ore, about three weeks ago, which produced about 2½ carloads of metal, assaying 200 marks of silver per ton; the branch still continues downwards, but too small to produce any great quantity of ore. The lode altogether is very wide—indeed, the walls, from the surface downwards, are not seen anywhere; and, if we should happen to fall in with a deposit of ore, the probabilities are it will be a large one.

Santa Susana.—The ore here is also very scarce, although the few bags that have been got out contain a good ley. As the rains have now set in, there is a little water in the shaft. If it becomes troublesome, I propose suspending it until the next dry season; and, in the meantime, to sink a few pits further east in this set, where there are two or three large lodes, presenting a promising appearance, hitherto untried. The cost of all this will be very little. I beg to hand you a statement of costs and returns for June, by which you will observe that the expenditure amounted to \$702; and, after deducting the value of the silver obtained from the Rejona torta, there is a deficit of \$803. The balance in hand at date amounts to \$1616, which will probably carry us on to the end of September.

REAL DEL MONTE MINES.—*Mineral del Monte, July 28.*—Your dispatches of the 30th May came to hand on the 17th inst. In the early part of this month the *William and Mary* arrived at Vera Cruz; but, owing to the blockade, was not allowed to land her cargo; and has, consequently, accompanied by other vessels, gone back to the Havana. The *Alta Jane* will, probably, have to follow in the same track; and I conclude, if the news of the blockade arrives in England previous to the sailing of the *Henrietta*, she will be detained. All these things will put us to a very serious inconvenience; but as it appears there is no impediment offered to the landing of quicksilver forwarded by the packets, I trust we shall be enabled to keep all the principal works going on without interruption. As regards the state and general prospects of the mines, little of importance has occurred since my last. The labor of San Enrique, San Pablo, and the frente of Santiago, continue to produce a good supply of smelting ore, and an increasing quantity of azogue; the frente just alluded to has now passed through rather more than 30 varas of good ore ground, but has lately become hard and wet, which makes it troublesome for driving; but it is satisfactory to observe, that the ores continue just the same. In my letter of the 29th January last, I stated that the ore ground above the Santiago level would, probably, be nearly exhausted in one year from that time; and this now seems likely to be the case, at least with respect to the smelting ores; we have, therefore, been anxiously looking forward to prepare means for sinking below. It was at first proposed to fix the flat-rods in the Santiago level, but on maturely considering it over, we found many difficulties, almost insurmountable ones, to this plan; we have, therefore, come to the determination of putting the rods in the San Juan level, which will, in every respect, be not only more convenient, but will, I believe, enable us to sink deeper, without adding much additional burden to the engine; but in order to do this, we find it necessary to cut down a good deal of ground, and even to drive a part of the level anew, in order to make it straight. This work, I expect, will be completed by the end of the year, and I believe the ore already discovered above the Santiago will continue to furnish near about our present supply up to that time. In the meantime, we propose sinking below, by means of hand-pumps worked by ponies, as far as we can, which will, probably, be 4 or 5 varas. At Dolores, the securing the shaft, and sinking the new shaft, referred to in former letters, are now completed, and the sinking the perpendicular will be resumed in the course of a few days. This important work will now, I trust, be speedily carried on, and reach the depth of the Santa Teresa in the early part of next year; after which, by extending a level northward, on the Santa Brígida vein, I expect we shall effect a diminution of water at Acosta. You will observe, by Capt. Rabling's letter, that he expects the 95 vara level north, on the Santa Brígida vein, will be communicated to the San Felipe rise in the course of next month—after which we shall be able to increase the raising of azogue considerably in the workings above the Avadero; it will also afford the means of ventilating the Avadero north, the driving of which is at present greatly interrupted, owing to foul air. You will also notice that the San Andres level is approaching very near the east and west branch, which crosses the Santa Brígida vein at this level, 44 varas north of Dolores shaft. When it reaches the point, it will, probably, drain the workings below the Avadero, near the San Felipe winze, above referred to. In this place, which is at present full of water, is a rich branch of smelting ore, and a lode of good azogue, about a vara wide, going down. I send you inclosed a section of those workings which will fully explain the respective situation of each. At Acosta the driving of the San Enrique or bottom levels, east and west of San Pedro shaft, we commenced about 10 days ago, the lode in each direction is composed almost entirely of blende, galena, and iron pyrites, intermixed with rich spots of silver ores. I entertain very sanguine hopes that this level, particularly going eastward, will turn out very good; there is every reason to expect it, judging from the pintas seen in the level above, and from those in the present end.

You will see, by Capt. Skiffill's letter, that we have commenced driving the Avadero level, east of Santa Brígida, on Acosta vein; and it is pleasing to observe that, although it has only been extended four varas, the symptoms are very promising; the lode is 6 ft. wide, spotted throughout with azogue—it contains also a small branch of smelting ore. The San Pascual winze having reached the depth of San Ysidro levels, the sinking was suspended, and a level commenced driving north, which has since been communicated with the same levels, south of San Cayetano winze. Since that time, we have continued driving south in each direction from San Pascual; we appear to have passed the bunch of smelting ore, which, altogether, does not exceed 10 or 12 varas in length. The ends of San Pascual winze, however, which is 30 varas deep from San Antonio to this level, have not yet been touched; and this week we have resumed the sinking below, where there is also a good bunch of smelting ore. The prospects in the mine of San Vicente, on the Santa Ynez vein, have lately improved, particularly in the 53 vara level, north of San Vicente shaft, where the lode is about 1½ vara wide, composed of good azogue ore, with a small quantity of smelting; and when the new hacienda de beneficio, at present in hand, are completed, we shall be enabled to increase the raisings from this mine considerably. It should be borne in mind, however, that, although in the foregoing I have chiefly confined myself to a description of the most interesting parts of the negotiation, we have a great number of important and expensive works, which are producing no returns whatever, and may not likely do so for considerable time to come. **Rosario.**—By Capt. Treuener's report, you will observe that the ore in the San Miguel level, driving east of San Rafael winze, continues very abundant, and which, owing to a little more care in cleaning, has again brought the mine assays up from 7 and 8 to 10 and 12 mcs. per mon; and I trust, in future, as the expenditure is moderate, and the whole concern conducted economically, will henceforward leave profits. The raisings of late have been limited to about 200 carloads per week; but this quantity can be increased when we have hacienda power to reduce the ores, without interfering with the returns from other mines. In the estimate of costs and returns for last month, we calculated on a profit of \$11,400, whereas the actual result was a profit of \$15,596; the estimate for this month showed an anticipated profit of \$12,200—the result I expect will be something better. You will observe, that the returns from the patio, at Regla, for June, were small; and, during the present month, they will be still less. This is owing principally to a delay in the arrival of the quicksilver in time to incorporate the tortas; the deficiency, however, will, I expect, be made up in the months of August and September. In Mr. Woodfield's letter, you will find a comparative statement of the patio results obtained in the quarter ending June, 1845, and June, 1846, showing a saving on the latter of \$14,399, if the assays can be relied upon, the statement correct; and it is very satisfactory to know that improvements to such an important extent have taken place. The results of the smelting works at Regla, during the last quarter, have also been very favourable, particularly last month, when 567 carloads of ore were smelted, which gave 4660 mcs. of silver; this, however, included 78 carloads of polvillos, which assayed only 24 mcs. per mon. The loss of silver on the assay was 5 per cent., and the cost per carga \$84—thus bringing the cost of each marc of silver down to 9 reals. The results of the barrel beneficio, at Sanchez, last month, was not quite so favourable as usual—the loss of silver being 9 4-10ths per cent., and quicksilver 5 6-10ths ozs. per mc. The quantity of ore reduced by this method amounted to 8468 quintals, which gave 807 mcs. 8 ozs., averaging 7 mcs. per mon. Mr. Spangenberg has been indefatigable in carrying on his new process, and is still sanguine as to his ultimate success. The quantity reduced by this method last month was only 14 mon; but it occupied him a great deal of time, during that period, making separate trials. The works connected with the erection of the new 18 barrels, at Sanchez, have gone on somewhat slower than Mr. Artha calculated, although nearly all the artisans have been constantly employed about it. By the end of next month, we expect eight of the new barrels will be at work, which, altogether, with the four connected to the fan blast water-wheel, will, from that time, augment the returns 50 per cent. The other four barrels, at present worked by the dry stamps water-wheel, will then be removed, and the eight barrels to be connected to the new water-wheel on the south side, erected with as little delay as possible. After this is finished, we purpose to replace the present fan blast wheel by one of a larger size, to work a stamp of 9 or 12 heads, as may be deemed expedient. I have the satisfaction of remitting you, by this packet, a bill for 2000¢; and by next mail, you may expect an equal amount.

UNITED MEXICAN MINES.—*Guanajuato, July 28.*—*Report on the State of the Workings of the Mine of Rayas.*—*La Purisima* is yielding a small portion of the common class of ores, on the same system of work as has been related in former reports.

San Lorenzo.—The communication between the end to the north-west and the lode has been made; but there is still some ordinary ore to be thrown down towards the lowest part of the end. The large cavity on the south-east side, referred to last month, is being gradually filled up; and sufficient security has been given to the upper part of the old workings to allow of the extraction of ore to be carried on, upon the same scale as usual, with only occasional variations. Seven pairs of barmen are employed by day and eight pairs by night. The roof of San Simon having been properly secured, by raising dry and sub-

stantial walls, the pillar on the south-east side has been removed, and has produced a fair quantity of ore, of good quality, amongst which some bunches of a rich class have been found; in the lower part of the lode ores are still met with. From the pit of San Pablo, in San Cayetano, some bunches of rich ore have also been extracted, which, together with the best classes from San Simon, are now under process of concentration in the hacienda of Barrera, where the richest parts will be smelted. Five pairs of barmen have been employed in these two points by day only.

San Miguel.—The work of San Dario has been communicated with an old point, formerly carried on by a buscon, on the north-west side, and there is evidently not much solid ground on the inclination of the lode—in which direction the best ores are found at present. An end has been commenced above the point of communication, and some ore is likewise being thrown down from the roof. The extraction from San Pedro assists, in a small degree, to make up the quantity of ores produced weekly on this side of the mine: 13 pairs of barmen are employed by day, and an equal number by night.

Santo Toribio.—Since the last report 5-65 varas have been driven through barren ground, which has not presented any variation that calls for particular notice. In following up the end to the south-east, some exceedingly narrow threads of ore are met with.

Santa Cecilia.—In the last four weeks 4-84 varas have been driven in this end. The favourable appearances mentioned in last month's report continue, and the upper part of the lode is not of so hard a formation as the lower part. A small quantity of water is met with in the advanced point. The water is now rising again in the great shaft, and will, doubtless, soon enter the level of San Simon, and probably interrupt the operations at present being carried on there. Without there being any point worked on joint-account by buscones that deserves any particular notice on the present occasion, it is necessary to remark, that the number of points worked on this system has increased lately, and this has brought with it a greater extraction of ores, but without much improvement in their quality.—G. R. GLENNIE.

Statement of produce of dressed ores, outlay, and sales in the mine of Rayas, for the four weeks ending 18th July:—

Ores remitted to Hacienda.	Amount of Memorias.	Half Sales of Buscones Ores.	Excess of Memorias over Half Sales.
June 27—Cgs. 470	\$ 3227 2 1	\$ 1394 0 4	\$ 1833 1 5
July 4	3062 2 0	2082 2 0	979 7 4
11	3520 3 5	1878 4 0	1641 7 5
18	3857 5 5	2368 3 4	1489 2 1
Cgs. 1900½	\$13,667 5 3	\$7713 2 4	\$5954 2 7

Guanajuato, July 24.—*Mine of Rayas.*—There is no change of importance in the appearances of the workings. The produce and outlay of the mine for the last four weeks give a rather better result than the previous; for, although the produce is less, it is more than compensated for by a decrease in the outlay.

Quicksilver.—The 80 bottles shipped per steamer *Avon*—the packet of the 1st of May last—were not allowed by the blockading vessel to be landed at Tampico, and they returned in the steamer to Vera Cruz, where they were landed and forwarded to Mexico. The further purchase of 80 bottles you advise by the present steamer will be landed at Tampico as usual—the American commander having announced his intention of permitting it to pass.

Remittances.—If specie can be shipped at Tampico with safety, and the usual conducta leaves here for that port about the end of August, I purpose sending about \$25,000 by it.—W. HEATH.

Note.—The remittance of \$10,000 to \$12,000, promised in Mr. Heath's last letter, has been received by this packet, in a bill of exchange for 2000¢.

London, Sept. 5. JOHN MATHER, Sec.

LAMHEROEE WHEEL MARIA MINING COMPANY.

A general meeting of the adventurers in this mine was held at the offices, 4, King-street, Cheapside, on Thursday, the 10th inst.

PETER DAVEY, Esq., in the chair.

The SECRETARY having read the circular convening the meeting, the CHAIRMAN briefly explained to the meeting the objects for which the adventurers had been called together, referring to the report and accounts, which would be then submitted for their consideration and approval, and expressing his readiness to afford to the shareholders assembled any explanation or information in his power.

The SECRETARY then proceeded to read the following report:—

REPORT.
Since the last report of the finance committee to the adventurers, on 16th April, 1846, the works on the mine, under the direction of Capt. John Tabb, have been steadily progressing, and it is satisfactory to the committee to be able to state, with every prospect of ultimate success. They deem it advisable, in the first instance, to proceed to the details of these operations, and their nature, as stated in Capt. Tabb's last report from the mine, dated 7th inst.—“I can only now report progress, and I regret that it has not been so fast as I could wish, owing to the delay in putting the engine and horizontal rods to work. These are now completed, and I congratulate the shareholders upon having at last reached the summit, whence their future progress will be uninterrupted and rapid. Everything is in our favour. Our ground in sinking both shafts is highly favourable for sinking, and what is of more importance, highly congenial for copper. We have 12 men in the engine-shaft, and have sunk better than 18 fms., and set 4 fms. more for 11½ per cent. In the flat-rod shaft we have eight men, who have sunk more than 12 fms., and set 3 fms. more for 10½ per cent. We shall continue to confine our force to these two shafts, until we get at the 30 fm. level, considering it most important. For this purpose, to lessen the expense as much as possible, we have suspended operations upon the northern part of the set for the present. In consequence, however, of a promising lode having been discovered in an adjoining mine (Wheat Benny) towards the southern boundary, I thought it advisable to employ a small force to search for it in our set. We have been successful; and, from its present line of direction, which is to the north of the flat-rod shaft, and 15 or 20 fms., it has a northern dip towards the shaft. From its direction, bearing, and appearance, I think it not improbable that it is the *Lor J* lode; should this prove true, it shows the character of the lode is unchanged for a great length, and cannot fail in enhancing considerably the value of our set.”

Capt. Tabb states, that the engine is equal to 150-horse power—works remarkably well—is strong and substantial in all its bearings—and equals any engine he has ever seen in Cornwall or Devon; from which statement, it may be fairly concluded, that it is fully and completely adequate to all the purposes of working Lamheroee Mine. It is necessary to inform the adventurers, that, after several consultations with Capt. Tabb, by members of the finance committee, who visited the mine, it was finally decided to confine the present workings to the six lodes south of the engine, and to leave the five northern lodes to be hereafter developed, as circumstances may dictate—an arrangement by which a considerable present outlay has been avoided.—The committee have now to present to the meeting the balance-sheet of calls and expenditure, from which document it will be seen that, when all calls now made are paid up, and the liabilities of the mine fully discharged, the funds will be exhausted, and that it will be necessary to determine upon a further call for the due prosecution of the works now in satisfactory progress. The arrangements for an exchange of land with Great Wheel Williams set, are concluded, and the purchaser has been instructed to prepare the necessary documents. It is recommended that, in future, no adventurer be eligible for the finance committee, who is not a *bona fide* holder of at least 10 shares in the mine. In conclusion, the finance committee beg to tender the resignation of their trust into your hands, and to recommend the re-nomination of the finance committee.

Summary of General Statement of Accounts.

Dr.—Four calls, amounting in all to 3½ per share, on 2048 shares	\$6144 0 0
Amount due Messrs. Bayley and Fox, for timber charged March, 1846	245 1 5
Ditto Hocking and Loom, balance of cost of engine	1893 0 0
Ditto Mr. J. E. Mare, castings for engine, committee's acceptance	293 19 5
Merchants' bills, July cost sheet	214 13 6
Total	\$8490 14 4

Cr.—Cost prior to the 16th April, 1846, as per last account	\$1808 16 2
Ditto, from that date to the end of July last, including engine and castings	4835 0 7
Deputation expenses, management in London, stationery, printing, postage, maps, &c.	74 12 10
Capt. J. Williams, balance of salary	5 0 0
Arrears of calls and calls unpaid, due 15th August and 15th Sept.	1589 5 0
Cash at bankers'	682 19 9
Total	\$8490 14 4

The following statement will show the present exact situation of the finances of the mine:—

CALLS—£3 on 2048 shares, to 15th Sept.	\$6144 0 0
COST—Up to the end of July	\$6218 9 7

The CHAIRMAN observed that, having lately visited the mine, he could not but express his entire satisfaction of the manner in which it was conducted—while he believed it was hardly necessary for him to offer any remarks on the prospects which it presented of profitable returns on the workings being carried to a further depth, so as to intersect the lodes at the 30 fm. level, as was proposed by their active and intelligent agent, Capt. Tabb, whose report had been read. The discoveries made in the mine immediately adjoining south (Wheat Benny) could not be deemed otherwise than most cheering, as the lode came into the Lamheroee set, and thus enhanced the value of the property. The proprietors would gather from the reports, which had been submitted to them, that the present workings were confined to sinking the engine-shaft, which was now down 18 fms. from surface, and, allowing 4 fms. per month to be sunk, it might be expected that, ere the close of the present year, the lodes would be opened open, and returns made; in addition to which the flat-rod shaft was in course of sinking with all dispatch—its present depth, as stated in the reports, being 12 fms. It was proposed, on its reaching a depth of some 24 or 26 fathoms, to make a communication between the two shafts, and thus intersect the several lodes in that part of the set. He (the chairman) could only observe that, having visited the mine, and made every inquiry, with the view of acquiring information for his own government as a party largely interested; at the same time that, as one of a body, representing the interests of others, he felt it a duty imposed on him to acquire the fullest information. He was gratified in being able to state, that his opinion as to the value of the mine was unaltered, and that it only required time and capital to develop its resources, and which opinion he found confirmed by the several agents whom he had met in the county, who were unanimous in their report as to the merits of the undertaking—while he had, on the contrary, never heard a dissentient opinion expressed. The worthy chairman expressed his high sense of the services rendered by those employed, and adverted to the excellence

of the machinery, and its application, with some passing remarks on the necessity of the adventurers paying the calls on their becoming due, so as to enable the committee to meet their engagements; and having, on the part of the finance committee, expressed their thanks for the confidence reposed in them—but who now retired from office, leaving it to the meeting to appoint a new finance committee in their stead—resumed his seat.

A general conversation ensued, as to the necessity of a further call being made,—and also as to the period at which the meetings of the adventurers should be held,—which two points have been determined as conveyed in the resolutions, which will be found in our advertising columns.

There was a numerous attendance of the adventurers—a large majority of the shares being represented at the meeting; and the proceedings appeared to give evident satisfaction.—Thanks having been voted to the late finance committee, and to the chairman, and the several resolutions unanimously agreed to, the meeting adjourned.

MENDIP HILLS MINING COMPANY.

A meeting of the shareholders was held at the offices, 44, Finsbury-square, on Thursday, the 10th inst., being the first meeting since the formation of the present company.—E. H. BARWELL, Esq. (Mayor of Northampton), in the chair.

The advertisement convening the meeting having been read, Mr. STAINSBY proceeded to submit the following directors' report to the meeting, which was accompanied by reports from Capt. Harpur and Mr. P. N. Johnson:—

DIRECTORS' REPORT.

In meeting the proprietors at their first annual meeting, the committee have much pleasure in being able to congratulate them on the prospects of the undertaking, which would appear to justify the present outlay, and to afford great encouragement for a further and more active development. Since the commencement of the operations by the present company, two new shafts have been sunk—one on Stainby's lode, and the other on Somers's lode—to the 25 and 30 fms. respectively. The two shafts sunk by the former company have been sunk to a depth of 38 fms. and 90 fms. respectively. The present state of the works may be gathered from the report of Captain Harpur, and which will now be submitted to the meeting.

From the formation of the present company, the anxious attention of the committee has been directed to the very great advantages which would be derived from obtaining a grant of the land immediately adjoining the present set, belonging to Lord Clifden, and which presents not only great facilities for extending the works on Stainby's lode (which runs into Lord Clifden's estate, at no great distance from the shaft), but also singularly encouraging features for new and important discoveries. In addition to this, which is of itself a sufficient inducement, there is believed to be a large and valuable tract of slag ground, which can be worked by the present company to great advantage. The slags contain about 25 per cent. of lead, and will, it is believed, yield a very considerable profit to the adventurers, from the fact of the party who has been working them on the adjoining land having realised, during the past 35 years, very large profits, although the operations appear not to have been conducted on a very extensive scale.

The negotiations to effect this desirable object have occupied a very considerable time, and constant attention on the part of your committee, as they experienced some competition from other parties; but they are happy to be able to state, they have obtained the promise of the grant from Lord Clifden, and, subject to the assent of the proprietors, propose shortly to commence operations, should the present meeting agree to accept a lease. The expense of working the slags cannot be great, as the chief object will be to remove the surface soil, which has accumulated during the lapse of years, and erect some buildings for smelting the ores. The grant, as regards the mine, is very extensive, and will afford abundant scope for future operations, should they be deemed advisable. In conclusion, the committee beg to assure the shareholders, that their most strenuous efforts will be directed to the improvement and development of what they believe to be a truly valuable property.

Abstract of Accounts for Twelve Months, ending July.

Dr.—Received on account of first instalment of 10s. each, on 5000 shares	£3400 0 0
Ditto ditto second ditto of 5s. per share	230 0 0
Balance	184 15 6
Total	£3764 15 6

Cr.—Cost for Aug., 1845, 37½ ss. 2d.; Sept., 27½ ss. 6d.; Oct., 11½ ss. 5d.; Nov., 18½ ss. 4d.	£270 1 5
Cost for Dec., 28½ ss. 7d.; Jan., 1846, 24½ ss. 11d.; Feb., 26½ ss. 7d.; March, 19½ ss. 4d.	990 11 5
Cost for April, 25½ ss. 2d.; May, 21½ ss. 8d.; June, 20½ ss. 9d.; July, 20½ ss. 10d.	881 14 5
Travelling expenses, 21½ ss. 2d.; directors' attendances, 25½ ss.; London management, 18½ ss. 8d.	454 11 10
Thomas Somers, 15½ ss.; interest, 21½ ss. 7d.; commission, 2s. 6d.; P. N. Johnson, 15½ ss.; law charges, 15½ ss. 10d.	67 16 5
Total	£2764 15 6

THOMAS WYNNIE, BENS. S. FOWLER—Auditors.

Hutton Garden, Sept. 10.—At this, your first annual meeting, I beg to offer some remarks as to the nature of the lodes in the set, the operations carried out, with their objects and prospects. When these mines were first taken up by the present company, the operations were confined to one of the many lodes which are seen at the surface—as large open workings—and from which the ancients must have taken very large quantities of ore. A shaft had been sunk 9 fms. perpendicular, and then about 16 fms. on the course of the lode, from which they took occasional stones of lead ore; this shaft was continued to a 30 fm. level, and the lode driven upon at this and a 20 fm. level; but the prospects being evidently in depth, and to get below any former workings, the 30 fm. level only was driven, for the purpose of ventilation, by communicating with a shaft which has been sunk further north-east, nearer the junction of two lodes, and which will be continued sinking when the before-mentioned communication is made. Another operation since sunk in the set, is the sinking of a shaft (Barrell's) on a western lode of the present company has been in operation, and from whence we have risen some lead ore; both these shafts are situated on the high ground, and the operations conducted on a scale of economy, and confined as possible to developing the ground in depth. In the northern part of the mine there are three lodes, which form a junction in the lower ground; and a shaft (Stainby's) has been sunk nearly at the junction, in the low ground, to 38 fms. At the depth of 18 fms., a level has been driven just under the former workings—the indications of which are promising of lead at deeper levels. At the present time, the lode contains lead, with ferruginous limestone, with a part decomposing; and I consider the prospect more indicative of an approach to a lead deposit than any that has been seen. The rock of the district is metalliferous limestone, and of the same nature as the Great Lead Ground of the south-eastern part of Spain; and there can be no doubt the lead deposit exists under the same circumstances in bunches, but to what extent or quantity further development alone will show, and which is now being carried out in the most economical manner consistent with proper and spirited prosecution. The buildings on the mine are only such as are essential for the residence of the agent, depositories for stores, and carpenters and smiths' shops. I consider that the geological features of the country, and the general prospects, fully justify a careful prosecution of the set for lead ores; and that the slags of the former workings will be smelted to a great profit by more efficient means than have been adopted by others, both in regard to raising, cleansing, and reduction of the metallic contents, by improved construction of furnaces for that purpose.—P. N. JOHNSON.

Mendip Hills Mines, Sept. 9.—In presenting my report upon the operations of these mines during the last 12 months, for the general meeting of shareholders, I beg to state, that Barrell's shaft has been sunk from surface 25 fms. on the course of Stainby's lode, by six men. At this point we have commenced driving a level north, to the extent of 2 fms.; the lode at present is 6 ft. wide, and has a better appearance than I have hitherto seen it. At the 14 fm. level, in the above shaft, we have driven north 17 fms. on the lode, but discontinued this end, in consequence of coming upon the old mine workings. At Somers's lode a shaft has been sunk by six men, 30 fms. from surface—but little has been driven at this level as yet. At the 30 fm. level we have driven north, by six men, 78 fms. down. This level has occasionally produced stones of lead, of good quality, in the last 30 fms. driven. About 24 fms. from the present end the lode was cut through, and found to be 9½ ft. wide, principally composed of carbonate of lime. Since that time we have been continuing the end on the foot-wall side of the lode, the indications of which present a most promising appearance; it is composed of quartz, flookan, and carbonate of lime, intermixed with stones of lead at times, and favourable for driving. A winze has been sunk below this level 9 fms., near where the lode was cut through, but was obliged to abandon it, from having foul air; there has also been a level driven south of the said shaft about 4 fms. I would recommend driving this level, as we have, about 30 fms. further south, than our present works, a lode that intersects the one we are working on—at these junctions of lodes large deposits of ore are often found. The new shaft has been sunk 20 fms. through very hard ground (lime-rock) at the east of Somers's lode; we then cut plat, and a cross-cut, now in course of driving by 6 men, to communicate with the 20 fm. level, driving north from Somers's shaft, for ventilation. Stainby's shaft has been sunk 38 fms. by nine men; we have commenced cutting a level at this point, and, when finished, shall resume sinking the shaft, as I think it will be a most promising appearance of this part, I am of opinion that we shall in depth meet with a rich lode; it is looking better now than when we first saw it. At the 18 fm. level, north and south of this shaft, levels have been driven—the former 10 fms., and the latter 44 fms.; but the lode in those ends not assuming a kindly appearance, I have abandoned them both. We have explored, in driving in different parts of the mine, 160 fms., and in sinking 129 fms.—making together 289 fms. of ground. Three horse-whims have been erected for drawing the stuff, &c.; we have an agent's residence, with office and material-house attached, carpenters and smiths' shops, and powder-house built. I consider our prospects to be encouraging, and I feel persuaded that the shareholders will be remunerated for their outlay, by acting upon perseverance and economy. The number of men now employed are as follows:—27 miners, 1 carpenter, 1 smith, 1 kiln, 1 fitter, and 1 lander. I beg to assure you that, since I have been here, nothing has been done which has not been found indispensable for the working of the mines.—F. C. HARPER.

The report and accounts having been read, a conversation arose (previous to the question being put, that they be carried, which, however, was eventually done with the unanimous feeling of the proprietors present), in the course of which, in reply to a question, as to the charge in the accounts, made for management, and that to which the committee were entitled, it was stated by the chairman and Mr. Fearon, that the committee had not claimed the full amount to which, under the deed, they were entitled, being satisfied with a lesser sum, under the circumstances in which the company was at present placed, there having been no returns; it being further understood, that the difference in the amount would not be claimed at an after period, or be considered as a debt or obligation on the part of the adventurers. The explanation thus afforded gave evident satisfaction, as it was manifest an impression in more than one quarter existed, that the cost of management was upon the terms defined in the deed excessive, when compared with the outlay and the limited operations; but which the reduction made, and explanation afforded, at once satisfied the proprietors.

The CHAIRMAN, in the course of the proceedings, observed, that he had visited the mine, and was strongly impressed with the importance to be attached to the acquisition which they had secured to the adventurers, should it be their desire to avail themselves of the proffered advantages—he referred to the grant proposed to be made by Lord Clifden, which that nobleman was prepared to make over to the company at 1-15th dues, without claiming any premium or advantage beyond the royalty, which might accrue from working the minerals on his estate, save a trifling sum which the company would be required to outlay, with reference to bringing home the water to the set, so as to render it available in dressing the ore. He might observe that, in addition to the

mineral tract thus proposed to be granted, there was a vast quantity of slag, or refuse, from the smelting furnaces, on the working of the mines by the ancients, or oldmen—the amount which had been realised by the lords of the Mendip Hills set on sale of lead from this means alone being very considerable, and amounting, as he was given to understand, to some 400,000, or 500,000.

In reply to a question from Mr. Mount, it was stated from the chair that the proposed dues of 1-15th was solely the charge attendant on the acquisition of the adjoining property on Lord Clifden's estate—at the same time, that the shareholders generally would have the opportunity of either availing themselves of the advantages presented, or declining to participate in the adventure. Should the majority determine on adding the proposed sett to that at present possessed by the company, there would be no addition to the number of shares, of which the company was constituted; while, should the proposed course be objected to, the parties at present in communication with his lordship, would have the right of forming another party.

Mr. P. N. JOHNSON, who illustrated his remarks by some rudely drawn diagrams, which were executed at the moment, observed, that the mine could hardly be said to have had a fair chance in working the lodes in depth, as they only just got under the old men's workings; and hence the ground, which might be termed virgin ground, remained unexplored. Mr. Johnson entered at some considerable length into the question of the geological features of the district—and observed that it was quite evident, from the large quantity of slag, even at this moment remaining on the surface; that a vast quantity of ore must have been raised in the former workings with profitable advantages to the adventurers. Mr. Johnson further observed that, in Derbyshire, the lead ore was found to hold down in the metalliferous limestone, and on comparing the strata with that of Spain, where lead was produced in large quantities, he could see little or any difference.

Mr. FISHER (of Salisbury) begged to inquire, whether the purchase-money of the shares—viz.: 15. per share—was not intended to have been employed in working the mine, and thus raising a capital for such purpose? He had visited the mine, and was well satisfied with what had been done by the present company, and furthermore felt satisfied that the proposed accession to the sett would be highly advantageous.—Mr. P. STAINSBY, in reply, expressed his regret, if that the honourable proprietor had, on embarking in the undertaking, under any mistaken notions or misrepresentations; he could only say, that he, in common with others, had taken up shares in the mine, and that the amount paid by that gentleman was in common for others as purchase-money of his interest, and independent of the cost of working the mine.

This statement was confirmed by a gentleman present, who stated that, as an original proprietor, he had sold upwards of 200 shares at 15. each, a portion of which had been taken by Mr. Stainby at that price, without any deduction being made, and, moreover, that friends, holding 200 shares and upwards at the present moment, had refused such price.

The several resolutions, which appear in our advertising columns, having been carried unanimously, and thanks voted to the chairman, the meeting adjourned.

[We may observe, that a somewhat novel course was observed on the present occasion—the register book, the journal, the cost and transfer books, and ledger, having been laid on the table for the inspection of the shareholders; this is a good example, and we doubt not will be followed in other cases. We need hardly add, that such course is the best reply to any charge of the secrecy of London management, when there is nothing to conceal.]

PENBUGLE AND LANCARFEE CONSOLS MINING COMPANY.

A meeting of shareholders was held at Oliver's Hotel, Bodmin, on Thursday, 27th August, when the cost sheets for March, April, May, and June, were examined, and found to be correct. It was resolved.—That a call of 30s. per share be made payable to the purser, on or before the 10th September next. Resolved.—That a banking account be opened with the Devon and Cornwall Banking Company, Bodmin; and that the banking company be authorised and requested to advance to the purser 2500s., in such sums as he may require the same, but so that the balance shall in no case exceed the said sum of 2500s.

The following report was presented by Capt. R. Rich, the agent:—I beg to report that, on the 24th of June last, the steam-engine was set to work, and thereupon the sinking of the engine-shaft was resumed, and is now sunk to the depth of 154 fms. below the adit level (22 fms. from the surface), through a stratum of blue killas, interspersed by a great many branches of lead, copper, mndic, and kindly spar—all the branches underlying towards the lode. From these and other favourable appearances, and also from the quantity of water proceeding from the lode through these branches into the shaft, I deem it most advisable, at the depth already attained, to proceed to cross-cut the lode, and have already commenced operations to that purpose, which I expect will be effected in about three weeks. In conclusion, I beg to reiterate the opinion previously expressed, and confirmed by subsequent observations, that the lode will ultimately prove highly productive, and remunerate the shareholders for the outlay now making to explore it.

The statement of accounts showed the expenditure for the four months to have been 735s. 12s. 6d., and a balance against the mine of 95s. 12s. 6d.

The following report from Capt. W. Martin was also presented and read:—I have this day, by your request, examined the above mine, and found it, as you observed, a very extraordinary lode: I examined this lode at the adit level about 20 fms. in length, which is not above 5 or 6 fms. deep from the surface. I must say, it has a most extraordinary appearance. This lode is what miners call a north and south cross-course, or lead lode, with an underlay about 2 ft. in a fm. west, and is from 5 to 10 ft. wide. It is composed of soft sugary spar, decomposed quartz, soft flooken or mineral clay, blende, spots of lead, and a large quantity of iron pyrites—altogether, producing a lode of an unusual appearance, deposited in a fine soft decomposed clay slate, interspersed with veins of mndic and spots of lead, apparently dropping into the great lode in depth. The engine-shaft is now down 15 fms. below the adit, and a cross-cut is being now driven at this level towards the lode, and is expected to intersect it in the course of a fortnight; after which, a little time will soon solve a great mystery, as to the results of this great, and I must say extraordinary, lode. I have seen bunches in rich lodes of very similar compositions, but never before in such abundance and extent; and I do believe, from the kindly indications, with so much mineral properties as this lode contains, judging from similar appearances, which I have seen in different parts of England and Wales during 30 years' experience, I do think that this mine is very likely to prove a great and prosperous concern. I admired the manner and spirit in which you are carrying on your operations; the engine-shaft is in its proper place, which must be very satisfactory to all parties; and I must say, that yours is the very mode of working that I should have recommended, had I seen the mine before you commenced your operations; and I am sure every experienced miner, after surveying this lode, and seeing the great mineral properties it contains, would recommend an effectual trial being made of it. As to my own opinion, I think the chances are very great in favour of success.

WHEEL FORTESCUE MINING COMPANY.

A meeting of adventurers was held at the mining offices, Tavistock, on Thursday, 3d September. JOHN BAYLY, Esq., in the chair.

The accounts and vouchers, from March to July, were produced by the purser, Mr. J. Matthews, and on examination found to be correct, showing a balance in favour of the adventurers of 111s. 8s. 9d. It was resolved.—That the cost-keeping in Slew be continued by as many hands as may be thought necessary, for cutting through the whole of the ground, from south to north, within the next three weeks.—That notices for tenders, for the building of a water-wheel, 34 ft. in diameter, and 34 ft. in breast, be immediately issued—such tenders to be required within eight days from the issue of notices; and that the notices shall stipulate for the completion of the contract within two months from the delivery of tenders.—Capt. S. Seecombe, having offered to sink the engine-shaft 10 fms. below the present point, at 16s. per fm., provided the water does not increase to more than one-fourth part beyond what may be found in the shaft upon forking the water, it was resolved.—That this offer be accepted; and in case the water should increase beyond the limit proposed, that then Capt. Seecombe shall be paid for so much ground as he may sink.—That this meeting do adjourn to the first Thursday in November, at 2 o'clock P. M.—That a call of 1s. per 256th share be made on the adventurers, to be paid at the Tavistock Bank, on or before the 17th inst.—[We are pleased to find that some energy is about to be exercised in this sett, for we really believe it to be one of great importance, being contiguous to the Great Maria, and having the same lodes running through it; it has been a matter of great surprise, to all interested in mining, that more energy has not been displayed. Should they, in cost-keeping, discover the Maria lode, which is supposed to be more north a considerable distance, it will considerably enhance the value of the sett on the west, and give an impulse to the exertions of West Wheel Maria especially.]

BALLESWIDEN MINE.—At a meeting held at the mine, on the 31st August, the accounts were presented, showing the labour cost for May and June, to be 2912s. 18s. 2d.; coals and carriage, 306s. 17s. 8d.; merchants' bills and dues, 1272s. 2s. 11d.—together, 4491s. 18s. 9d. By sales of tin ores, 4987s. 13s. 6d.; sundries, 59s. 18s. 3d.—5047s. 17s. 9d.—showing profit of 555s. 19s.; to which add balance in hand, 587s.—making, 1142s. 19s. By dividend of 6s. per 1-1624th share, 487s. 4s.—leaves balance in pursuer's hands of 655s. 15s.

CRIBOR CONSOLS MINING COMPANY.—A meeting of adventurers, was held at Tavistock last week, which was adjourned to yesterday (Friday, the 11th, to have sections of the workings, in order to more fully elucidate the past, as well as the intended future operations of the sett. This will afford the meeting a better opportunity of deciding as to the future development of the side lode which holds out much promise, especially going west. It is also intended to open other lodes which are already known in the sett.

PERAN WHEEL VIRGIN.—At a meeting of adventurers, held at the mine on the 22d August, the accounts were presented, showing balance against the adventurers of 188s. 17s. 8d., when a call of 5s. per share was made.—Capt. Rowe having stated that the mine is deserving a steam engine, it was moved

by Mr. Williams, seconded by Mr. Knight, and carried unanimously, that such engine be forthwith erected. That Capt. Francis and Rowe purchase such an engine, and pitwork and machinery connected therewith, as they may consider necessary, and erect it at equal expense of the two companies—viz.: Perrin's Wheel Virgin and Calstock adventurers. That the engine-shaft be sunk on the boundary of the two fets. That the expense of sinking the engine-shaft, fixing pitwork and machinery, drawing the water, and driving the cross-cut to cut the lodes from the said shaft, be borne at the mutual cost of the two companies. That the said arrangements shall be binding on both companies for 12 months from the date of the engine going to work, and that if either company shall cease to work any ground that may be drained by the said engine, a notice of four months shall be sufficient to liberate that party from participating in the expense thereof. That the engine, pitwork, and other machinery connected, be taken by valuation of two, or, if necessary, three competent persons, by the party retaining the engine. That Capt. Rowe's salary be increased to 4l. 4s. per month, to commence with August month. That the horse-engine be continued until we bring the 6 fm. level under the north winze. That Capt. Nankivell's salary be increased to 5l. 5s. per month.

WHEEL CATHERINE LEAD MINE.—At a meeting of adventurers, held at the White Hart Inn, Truro, on the 26th of August, the accounts—showing balance against the adventurers of 295s. 12s. 8d.—were examined and allowed, and the purser empowered to institute legal proceedings for the recovery of outstanding calls.—The sale of lead had been: to the Penpool Lead Smelting Company, 1 ton 6 cwt. 3 qrs., at 10l. 16s. 6d. per ton (less 1-15th dues, 19s. 1d.), 13l. 7d.—It was resolved.—That the operations of the mine be suspended, and that the purser be requested to give notice to Capt. J. Bray of such determination; and that he be required to meet Capt. Middleton on the mine, to conform to the provisions of the agreement entered into on the 1st day of June, 1844, by himself on behalf of the Wheel Hope adventurers, and Capt. Middleton on our behalf, to value and take our moiety of the materials on behalf of Wheel Hope adventurers; and that in case any difficulty should arise in carrying out the agreement, the purser and Capt. Middleton are authorised to take such steps, in reference to the disposal of the materials, as they shall deem most eligible for closing up the affairs of this mine.

WHEEL GRACE MINING COMPANY.—A meeting of adventurers was held at Tavistock, on Wednesday, the 2d inst.—J. H. HITCHINS, Esq., in the chair.—The accounts of the mine were examined and found correct, and the same were passed. It was resolved, that a steam-engine of 30 in. cylinder should be immediately ordered, and preparations made for sinking the shaft, with a view of taking the lode at the 60 fm. level. A call of 5s. per 1024th share was then made.—[The promising appearance of the lode in Wheel Carpenter on the west, and the course of ore recently discovered in Wheel Concord, immediately on the east, has laudably induced the adventurers to see the lode at the 60 fm. level, and thus avoid expenditure in driving intermediate levels, before they have ascertained the real value of the lode at that depth. These measures, if vigorously carried out, will, in all probability, make Wheel Grace a permanent mine.]

WHEEL TREHANE.—A special meeting of shareholders was convened for Wednesday last, for the purpose of deciding on the prudence of sinking a new shaft, but the result has not yet reached us. Trehane is generally considered a favourable speculation, having the Wheel Trelawney lode on the north, as well as an east and west lode, which was cut in sinking the engine-shaft in Trehane. The sett can be worked very inexpensively.

[FROM CORRESPONDENTS.]

EAST POOL.—We are given to understand, that the water is up to the 70 fm. level, which is calculated to have a serious effect on the adjoining mine of East Wheel Crofty, which, being at a greater depth, will have to draw the water from her fair neighbour. Lady Bassett's steward, we are informed, has insisted upon the mine being fairly worked, so that the adjoining mines shall not be prejudiced. What may be the result, time will show.

TAVY CONSOLS.—A very important discovery was made here on Wednesday, the 2d, by the intersection of a new lode, containing very rich stones of copper ore, which has induced the locality to entertain high opinions of the sett. We have seen some of the stones, which is composed of grey, black, and peacock ore, with a large proportion of malleable copper.

WHEEL AGAR.—A discovery has been made within the past week at the 60 fm. level, where the lode, which has been so productive in East Pool, has been cut—the ore obtained from which goes to pile as raised. Little doubt is entertained but that the adventurers, who are out some 16,000l., will be amply repaid for their expenditure, and the time which has been spent in bringing the mine to a profitable state of working.

WHEEL NORRIS.—The shareholders are looking forward with much anxiety to the cutting the lode in the bottom level, which is expected in about six weeks: the ground at present is hard.

GWINEAR CONSOLS.—The operations at this mine are progressing highly satisfactorily. The lode was taken at the adit level about the middle of last month, and has been driven on several fathoms, the ground being easy. It is expected that 20 tons of ore will be ready for sampling by the end of the present month, worth 10s. per ton. The shaft, sinking on the great south lode, presents indications of a favourable nature.

IMPROVED TREATMENT OF MUNDIC.

At the Royal Cornwall Polytechnic Society, the CHAIRMAN said it would be in the recollection of many who were present, that three years ago Mr. Oxland gave some explanation of a peculiar process by which those almost useless ores of mundic raised in this county were turned to good account. The Chairman said it might become a matter of very great importance and benefit to the county. Mr. Oxland had, however, a great deal to do in carrying out the discovery, and was now ready to explain any improvements that he had made.

Mr. OXLAND spoke at considerable length, but the substance of his observations was as follows:—By the mixture of common salt and sulphurated ores, or mundics, and by roasting these together in an open furnace, a sulphate of soda was produced, associated with peroxide of iron. The sulphate of soda thus produced by treatment in a black ash furnace was converted into an alkali, which was extensively employed by soap and glass manufacturers. The mixture of sulphate of soda and peroxide of iron has also been found to be valuable as manure. The peroxide of iron alone has been employed as crocus for polishing plate glass; and, associated with fatty matters, it produces an admirable lubricating material for machinery. By an extended application of the principles involved in these processes—namely, the production of sulphuric acid by the oxygen of air alone, without any assistance from that obtained by decomposition of nitrate of soda—he (Mr. Oxland) had succeeded in producing chlorine for the manufacture of hydrochloric acid, instead of (as by the usual process) obtaining the oxygen by a decomposition of the black oxide of manganese. The advantage of this process consists not only in obtaining the oxygen without cost, but also in obtaining double the quantity of chlorine from a given quantity of hydrochloric acid, as compared with the old processes. Since the introduction of this process, chlorine has also been obtained by an invention of Mr. Longmaid, by causing the oxygen of the atmosphere to act on the chloride of iron, volatilising as in the before-mentioned process (for producing sulphate of soda), oxidising the iron and setting the chloride free. These processes are likely to be advantageous to the Cornish mines, as affording the means of rendering sulphur ores of some value that were hitherto valueless; and also, by reducing the cost of producing alkali, it is probable that this substance may eventually be extensively employed in smelting operations. To the public generally these operations will be advantageous, by producing at less cost soap, soda, and glass, in its various forms. These processes are now being put into most extensive employment at St. Helen's, near Liverpool.

MINE ACCIDENTS.

Tregollan Mine, near Bodmin.—J. Nicholls, and R. Tremayne, were very seriously injured by the bursting of a boiler—Nicholls is not expected to survive. **Parr, St. Helen's.**—J. Hill was killed in Messrs. Johnsons and Co's Collieries. **Upper Bank Copper-Works, Llanvannet.**—As L. Morris was passing over a tapping pit, into which a quantity of metal in a fluid state had just been tapped, the plank slipped, and he fell in: the poor fellow managed to crawl out, but he is not expected to recover the dreadful injuries received.

Bishopscarmouth Iron-Works.—As D. Bough was working near the large forge hammer (five tons weight), which was fastened up, by some means it got detached, and came down upon the anvil, while the hand of Bough was resting upon it, which, of course, was crushed to atoms.

Doon Bank Colliery, Tipton.—J. Cooper was killed by an explosion of fire-damp. **Darby Hand.**—As B. Willets (employed at one of the British Iron Company's pits, to help the bankman) was pulling a skip at the mouth of the shaft, he fell backwards down the pit, and was killed.

NEW STEAM-ENGINE.—A patent has recently been issued for a steam-engine of novel construction, invented by Ezekiah Olney, of Governor, New York. The engine comprises a cylinder, piston, and piston-rod: the latter is hollow, and contains two semi-circular orifices through its entire length; one of these serves as a channel for the induction, and the other for the eduction, of steam. The piston is hollow, and serves as a valve chamber, and contains two sets of sliding valves, the ends of which project a little beyond the piston, so as to come in contact with each cylinder-head alternately by the motion of the piston; and by this contact their positions are changed so as to open and close the induction and exhaust valves at the precise point at which those changes are required. There can be no doubt that this plan may succeed well in some instances, though it will not be likely to supersede the other kinds already in general use.—*Scientific American.*

CONSOLIDATED COPPER MINES OF COBRE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It was with much surprise, and no small regret, I read in your Journal, of the 29th ult., the letter of "A Friend of the Third Party," on the subject of the law suit pending on the Sanctuary ground, to which it appears three parties now profess to have equal rights. On a careful investigation of the report of the directors, presented at the meeting on the 24th of July last, I thought I perceived considerable ambiguity and attempt at mystification. At the previous meeting, on the 12th of January, we were told that "a decision had been made in our favour for the appeal to be heard in the Havana; and that, as the claims of the Santiago Company were altogether hopeless, it was reasonably hoped they would cease from fruitless opposition, and that the company would soon be put in possession of their rights;" and yet we are told, on the 24th of July, that authorised agents had met, and it was agreed to cede 1-12th part of the ground to the Santiago Company, although, at the same time, it was well known they had no claim to it; yet, in spite of this generosity, the Santiago Company would not ratify such agreement, and that the directors were now prepared to commence fresh proceedings to compel them to accept what they had no right to. This tergiversation clearly showed me there was much behind the scenes the shareholders had no idea of. If the appeal to be heard in the Havana was so certain to end in favour of the Cobre Company, why, Mr. Editor, in the name of all that's reasonable, did the directors not instruct their agents to listen to no proposals whatever, but wait the result? The plea of "great delay and expense of litigation" is all a blind, as, according to their own showing, that was on the eve of a happy termination. No, sir; the reason was, "A Third Party"—that "Third Party" whose claim is not to be considered of any validity, or that it can occasion any serious impediment to the company—getting a final decree in their favour." That "Third Party" who, should amicable arrangements be come to ever so soon with the Santiago Company (which I very much doubt), is ready to pounce upon us, and keep us in hot water, and without dividends for years to come; and that "Third Party" who, according to the letter of your correspondent, appears to have more right to this sanctified bone of contention (which, after all, may prove not worth picking) than either of them. It does appear to me, Mr. Editor, that a grave responsibility lies on the directors; the close manner in which all the affairs of the company are conducted, the exclusion of reporters from the half-yearly meetings for some years past, which was not formerly the case, and the clear and straightforward manner in which our position is shown by your correspondent, convinces me that the directors are in a dilemma, from which they do not know how to extricate themselves, and hopelessly think that, by secrecy and evasion, to put off the evil day from time to time, until something turns up in their favour. The present price of our shares being 17 discount, while the Santiago are 6 premium, is a pretty convincing proof of which are most appreciated by the public—those of a company governed by a secret inquisition, or those on which every information is given to the shareholders, and the press admitted on all occasions. The directors are men of wealth and high standing in society; let them at once call a public special meeting of the shareholders, and fairly tell us how the affair really stands; the time is gone by when, in such a case as this, we can be longer gulled by the plea, "that publicity would tend to prolong the period of arrangement"—one so often made. If they do not, I would press upon some of my brother shareholders, of more influence than I am, to call an early meeting, and take steps for the adoption of measures, which shall rescue our property from destruction through contentions and wild expenditure in litigation. There are many like myself of small capital, who purchased Cobre shares as a safe and profitable investment, to whom the suspension of dividends has been not only inconvenient, but an absolute curtailment of necessary income, and who, like me, could conscientiously sign themselves—A POOR SHAREHOLDER: Drompton, Sept. 9.

WHEEL CORNWALL MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I observe a letter, in your Journal of last week, signed "A Friend to Cornish Mining," reflecting upon the conduct of Wheel Cornwall adventurers; and as what he states is palpably false, I shall feel obliged by your publishing the following in answer thereto:—Wheel Cornwall Mine is situated adjacent to Wheel Grey, immediately contiguous to the Wheel Vor Mine, which has yielded the adventurers near 200,000l. profit. The mine is divided into 100 shares, held by five proprietors only—all of whom authorise me to state, that they have offered no shares for sale, nor is it their intention to do so, at the present moment. I doubt not but that your anonymous correspondent may feel somewhat sensitive, from the circumstance of his possessing no shares in the adventure; but what object he can have to serve in directing attention to the mine in so unfair and unjust a manner, I am at a loss to understand. I shall be most happy to afford information respecting the mine, or the adjacent properties, on application made to me at my office; but I must decline further noticing the illiberal attacks of an anonymous correspondent. R. TREDDINICK.

Three Kings-court, Sept. 7.

NEGLECTFUL CONDUCT OF A SHAREBROKER.

SIR,—In December last, I sold to a mining broker the following shares, at an immense sacrifice, and signed the transfer papers:—10 West Wheel Jewels; 20 Altens; 10 Tretails; 5 Holmbush. In July last, I accidentally found that not one of these shares was transferred from me; but my name to this hour stands as a shareholder. I have frequently written to the broker, who has stated that the shares have been transferred, and that all is quite right—but this morning's post has brought me letters, stating that my name still continues as a shareholder. What steps ought I to take under these circumstances? I have thought it right to expose such conduct, through the channel of your respectable Journal; and, if you notice, in any way you please, these remarks, as to guard the unwary, you will much oblige—A CONSTANT READER.

P.S.—I enclose my card for your satisfaction.

[We trust the publication of this letter will be the means of procuring an amicable settlement of the affair, without comment from us, or further proceedings on the part of our correspondent.]

MINE SETTS AND RAILWAYS.

SIR,—Allow me to direct your attention to the fact, that the omission to include sett of mines in the reference book of the West Cornwall Railway, and the consequent non-service of notices in respect thereof, was declared by a committee of Commons not to be a non-compliance with Standing Orders. Are not mine-owners lessees? of course, they are; and have often a greater interest than the landowner, land-lessee, or occupier. No one can deny that they are occupiers of their account-houses, which require room, whatever the level of the rail above or below the surface. "Never debate a settled point," is a legal maxim; but how far it is applicable to Parliamentary practice is a question. How is it in the north, with coal and other mines? Are they, too, mere non-entities, like our hundred thousand pounders in the west? It is a pity, but that the synopsis of the mining interest should have appeared in the *Mining Journal*, the *Post*, and the *West Briton*, before such a decision. It seems that when lines are favourites with the Board of Trade, or "the powers that be," any thing is a compliance, or non-compliance, to be over-ruled by a section of a house, whose legislation, but for the consequences involved by Royal Assent, would be but little better than a State farce, and, as D'Israeli says of italics, "the last resource for the forcible sables." A. T. J. MARTIN.

THE CELEBRATED COPPER ROCK.—Much as we have already published respecting this far-famed natural production, we could hardly have expected to meet with anything new on the subject, but the following extract from an American letter may prove of interest to those of our readers who put faith in Yankee tales:—"You have undoubtedly heard of the enormous copper rock at Eagle Harbour location, pronounced by Dr. Pettit, the great grandfather of all the rocks of this kind—estimating its weight at from 75 to 100 tons. A brief description by an eye witness may be interesting to your readers. At Eagle Harbour, commencing at the shore of the lake, is an open cut 12 ft. wide, 85 long, and 7 to 8 ft. deep, in which is found this enormous mass of copper. The sheet, which is 90 per cent. pure copper, is in the centre, running the entire length of the cut, varying in thickness from 6 in. to 2 ft., having branches of from 1 to 2 in. in thickness shooting from it east and west, and varying in length from 1 to 2 ft. The interstices are filled with sand and trap rock, charged with native copper—say 50 to 75 per cent.; also small masses of beautiful crystallised marcasite or spar, filled with what has the appearance of copper filings—being quite rich. This is what is called the copper rock—as unlike a rock as possible; it looks like a large tree that has fallen, and turned into metal, with this exception, that its depth is not in proportion. Large detached masses of native copper, weighing from 50 to 300 lbs., are taken from alongside of this sheet, and the vein stone up to the wall rock is richly charged with copper in its native state."

ROTARY STEAM-ENGINES.—Mr. W. Wright, of Providence, Rhode Island U.S., has recently patented a machine for boring out the cylinders of rotary steam-engines: the patentee in describing his invention, says, it consists in arranging a cutter, which, as it rotates with the shaft to cut out the annular groove, receives a slow rotary motion on the arm or flange which connects it with the shaft, to make the groove a true circle in its cross-section.—*Claim:* I, therefore, claim as my invention the giving to the cutter a rotary feed motion on its axis, as it is carried around by the main shaft as herein described, or in any manner substantially the same.

CEMENT.—Mr. J. Keating, of North Mews, Fitzroy-square, has patented some improvements in the manufacture of cement; the invention consists in mixing borax with gypsum (sulphate of lime) in the following proportions:—5 lbs. of borax, and 5 lbs. of crude tartar are each to be dissolved in 6 gallons of water, and when dissolved the two solutions to be mixed together. Gypsum in lumps (first deprived of its water crystallization by heat) is to be put in a solution, till it has absorbed as much as it will take up, and then put in an oven and heated red hot; afterwards it is allowed to cool, and ground, and then again mixed with the above solutions and heated in an oven; when taken out, it will be ready for use.

WHAT IS THE COST-BOOK SYSTEM?

A correspondent, in our Journal of 22d ult., asks the significant question, "What is the Cost-book System?" and, having raised the question for the one thousandth and first time, proceeds forthwith to give his version, on which we may be allowed to make some passing remarks. We are well aware that our correspondent has had to do with many mining adventures, whether worked on the Cost-book System, or otherwise; and we consider him well able to draw the line, so far as his own construction goes, of what is, and what is not—but let us for a moment consider the question as submitted by him, and take his various points each in their turn, and see how far we agree—for it is only to be expected, after directing our attention to the subject the past few weeks, and having obtained the opinions by personal communication with many practical men, that we should have a word to say on the subject—otherwise, it might be supposed that the opinions expressed had our full concurrence.

It will be well, then, to take the several points mooted by our able and intelligent correspondent, while we may refer to the opinions entertained by a contemporary on the subject, and which appear in another column. In following our correspondent's remarks, we will pursue the numbers attached to his responses to the question propounded by him, of "What is the Cost-book System?" while we have only to add, that the communications of correspondents, in setting us right, if that we be in the wrong, will be received with satisfaction, and inserted in our columns with pleasure. We will, then, begin with No. 1. That it is necessary to have a license or lease from the owner "to search for," and, moreover, to "dig, raise, and carry away," is (we think) too clear to render any observation necessary; but this we take it as of general application, and not confined to the Cost-book System—although we are free to admit that many companies have been formed with the expectation of finding lodes, and have purchased engines, employed a host of officials, and an exploring force or band of miners, assayers, &c. As to the company having "any claim" on a mine where there is no lease or license, it carries with it its own reply, and, therefore, requires no further comment.—2. The construction or opening of a cost-book, with the respective number of shares held by the several adventurers on the formation of the company, and signed by them, is, we believe, indispensable; in such cost-book any rules or regulations not being opposed to, or varying from, those recognised as the Cost-book System are inserted, and are binding on the body of adventurers: signing the cost-book, or by their assigns, by virtue of a conveyance or deed of transfer.—3. "When all the shares are taken, and the cost-book signed, then (says our correspondent) the pursuer is to call a general meeting of the shareholders." Now, we take it that, upon a mine being divided into 256, or any other number of shares, the very first act on the part of the adventurers is to name the pursuer, and to determine on those specific points which our correspondent considers the third stage. We here differ with him as to the construction which his language is open to, although (we believe) we both mean the same; but, as his proposition stands, it is clear that the pursuer is "One and All." It should, however, be remembered, that the pursuer is but an agent, and may, with the captain, agents, or committee, be removed at pleasure. This clause we recommend to the attention of our correspondent to re-peruse, and give a more explicit definition of what he considers is the position of a pursuer, who, as we apprehend, must needs be subject to the directions of a majority of the adventurers when assembled, pursuant to notice.

The appointment of a committee of management, we consider, is but the nomination of two or more of the adventurers, to take upon themselves the observance that certain acts are done in the interval between the time of their appointment and their next meeting; while no general powers are given, but they are confined to such matters as may appear on the minutes to which their attention is to be specifically directed.—4. "No call can be made but at a general meeting of the adventurers." With this we perfectly agree; and we conceive in such cases where calls have been made without the adventurers having been called together, and their assent obtained, the committee will, under the "Cost-book System," find a difficulty in enforcing the payment of the calls so made. We have some doubts whether the 2s. 6d. stamp is requisite, under the Cost-book System, to grant a proxy; and we also have our doubts whether it is indispensable necessary that the person appointed to vote a proxy should be an adventurer—we think not; all we know is, that if such be the strict rule, it has not been strictly adhered to: on this point, however, our correspondent may be better informed—we can only say, we know the system as it has been generally acted upon, there can be no doubt but that it is preferable to appoint a co-adventurer to a stranger; but the question after all is, "What is the Cost-book System," and what the general usage?—5. Our correspondent next tells us, that the monthly cost-sheet is made out by the pursuer and captain, when a cheque is drawn for payment thereof by the pursuer, or by a committee of management. That this is ordinarily the case, we admit; but it is to be remembered, that the pay is generally some six weeks behind hand, and that the adventurers have an opportunity of seeing the monthly cost-sheets, and checking them from time to time—so that the pursuer is not vested with a power independent, but is at all times subject to the direction of the adventurers. We may here observe, that the accounts, whether for labour or merchants' bills, should be carefully examined, and not merely signed, as we well know is too often the habit; while the latter—we mean the merchants' invoices—should accompany the articles, and be checked at the time of delivery, and regular store accounts and material books kept.—6. The pursuer, at the end of every two months, we are told, is "to call a general meeting," when the accounts are to be inspected, and a call made, if necessary, to meet the current expenditure. On this point we have to say a word or two; it is, we believe, usual that, at the meetings of the adventurers, they are from time to time adjourned, or a specific day fixed for holding the ordinary meetings—the notices being issued by the secretary, it is not being his province to call them, except at the request of a certain number of adventurers as may be agreed upon. It should be clearly understood and defined, what are the pursuer's duties, as otherwise difficulties might arise; moreover, under the Cost-book System, we consider it is not imperative to hold meetings every alternate month; they may be monthly, two monthly, or quarterly, according to the magnitude or reduced mode of operations; meetings held every two months being, however, the ordinary course observed.—7. On this we have no remark to offer; the pursuer, or parties appointed, receive the bill for the sale of ores, and pay the same into the bankers; and should any surplus appear at the ordinary meetings of the adventurers, the whole or a portion, as may be deemed most prudent, is divided *pro rata*.—8. In case of default in payment of calls, our correspondent observes, that the adventurer so in default may be sued for the same in the Stannary Court, if the mine be in Cornwall, and his shares sold or forfeited. We presume that, on the payment of the call being enforced, neither the one or other of the latter alternatives are resorted to—such we take to be our correspondent's meaning. We are next told that, "if the mine be elsewhere" (than in Cornwall), he can be sued at common law. We beg to differ here: while we think a little explanation on this point somewhat useful. An action at common law would not lie between the adventurers generally, and the one in default—but as affects the claims of any individual, not a partner, he may proceed against any one, or more, of the adventurers or shareholders, for the recovery of a debt, although incurred on the account of the company or body of adventurers generally.—Clause 9, referring to the mode of transfer, states that no stamp is necessary; it must, however, be borne in mind, that this remission applies only to mines worked under the Cost-book System—any deviation from which at once brings them under the Joint Stock Companies Act, 7 and 8 Vic., c. 110; or under the laws of partnership, whereby no transfer of property can be made except on stamp. Our correspondent states that the pursuer, on receiving notice of transfer, and having registered it in the cost-book, gives notice thereof to the purchaser—this, we allow, should be done; but we are not aware whether it is a duty imposed on the pursuer by the Cost-book System, although he may out of courtesy communicate such information.—10. In conclusion, our correspondent says—"No mine can be abandoned, and the company dissolved, but at a special meeting, to be called for that purpose by the pursuer." Here, again, we are at issue; as we fancy the adventurers have the power to convene a meeting—for, otherwise, as the above quotation reads, it would appear that the assent, and the act of the pursuer, were indispensable, and who might, it is possible, decline to act—to be sure, we take it that the adventurers can at any time discharge their pursuer, but to do so a meeting must needs be convened. We have thus run through the main points raised by our correspondent, which will be found at greater length in the Journal referred to—while we think it will be admitted, that he has somewhat hastily thrown together his ideas, without giving the subject that careful attention we should have expected, when it is considered that the attention of our readers has been invited for some weeks past. Indeed, one omission will, we think, suffice—that of the power given under the Cost-book System to any adventurer, of withdrawal from the mine, and all liabilities, after such notice shall have been given to the pursuer, upon the payment of costs and liabilities then existing—the adven-

turer so retiring being entitled thereupon to a proportion of the machinery, ores, &c. This, in itself, so important a feature in the Cost-book System, it is strange, should have escaped the notice of our intelligent correspondent, for it is the very essence of the system; it at once puts an end to all responsibility henceforward, and thus gives to the adventurer a security to which, under no other system can he lay claim. It must, we think, be readily admitted that, under the present loose system on which many mining companies are carried on, there is no security to the individual—while we have no hesitation in saying, few are the exceptions where the Cost-book System is observed or acted upon. Some remarks from other correspondents, as well as the essay of our contemporary, will meet with notice on a future occasion; while, again, we court the communications of our correspondents generally.

THE COST-BOOK SYSTEM.

As the principle and features of the "cost-book" have attracted somewhat attention since the passing of the Act for the Registration and Regulation of Joint-Stock Companies (being the only exemption from its provisions), and more especially at this period, when home mining enterprise is making such rapid strides, it may be useful to make a few remarks on the subject. It is a custom which has become law—or rather recognised by law—the 7 and 8 Vic., cap. 110, declaring that nothing in that Act contained "shall extend, or be construed to extend, to any partnership formed for the working of mines, minerals, or quarries, of what nature soever, on the principle, commonly called the Cost-book Principle." It is, in fact, and declaration of the Eton Montanum motto, *Modo pro Leges*.

It is remarkably simple, yet very stringent. It has existed from time immemorial in mining districts, and, when strictly adhered to, is a complete prevention of litigation. That there have been many and great faults and misdeeds committed, there can be no doubt, but they have arisen almost entirely in cases where the pursuer or manager has been left in sole control of all the funds and proceedings of the undertaking, and where, perhaps, no cost-book has been kept. We are, therefore, rather astonished to see it argued by a correspondent of the *Mining Journal*, that it is objectionable to have committees of management. So far from being a drawback or difficulty, we hold it a contrary tendency—that it is most satisfactory, and indeed necessary, for the interests of all concerned. The pursuer himself, who really desires honestly and honourably to execute the trust and confidence reposed in him, must prefer the co-operation of a committee; while the shareholders feel security in the checking power of both pursuer and committee collectively, as regards each other; for, although the duty of the pursuer, irrespective of his position as one of the committee, and that of the committee itself, is clearly defined and quite distinct, and that no act of his or theirs, at variance with the rules and regulations of the cost-book, can in any way compromise or render the proprietary liable, still it is gratifying to know the whole arrangement is so complete that it is, in fact, a self-checking system.

An association formed under the cost-book is an extended partnership, with limitation of responsibility, and requires neither deed, charter, nor Act of Parliament, to carry out the object it has in view. The cost-book alone regulates and governs all proceedings. The rules and regulations provide for the general management, payment of cost or calls—duties of committee of management—retirement of shareholders, independent of the power of transferring shares—and, indeed, every minute particular, so that neither the committee nor pursuer have anything to do other than the strict carrying out of the provisions laid down. This book is signed by all shareholders, and, when once formed and signed, no alteration whatever can be made without the consent of a general meeting of the proprietary, specially summoned, and at which a majority of the shareholders must be present either in person or by proxy. Hence the necessity of having the rules and regulations drawn up, and signed by the shareholders, is a matter of the utmost importance, as one of the vital importance to the well-being of a properly constituted association, as well as for the prevention of disputes between buyers and sellers. This arises from the carelessness, or rather indolence and want of consideration of the mining shareholders, who rather set their faces against this arrangement, as it obliges them to have separate transfer papers for every company, instead of having one general form, without any endorsement whatever; again, and in another way, showing it is the abuses of the system, and not the system itself, which lead to error and occasion discouragement. It is a mistaken notion of saving trouble, for it is clear the different companies could furnish the brokers with the necessary papers, and, in doing so, they would be doing so to the benefit of the system, and the cost-book; therefore, signing a transfer is, virtually, signing the cost-book itself; and thereby rendering the purchaser liable to its regulations, so that the necessity, as well as the correctness, of having a proper transfer paper, is too obvious to require further comment. We have seen several transfers lately, and we must say the one adopted by the Pennant Lead and Copper Mining Company seems to meet the general principle in every particular. On the face it contains the usual wording of a transfer, with the addition of "subject to the same rules and regulations as endorsed," and on the back, there is an entire transcript of the cost-book, so that a purchaser who has never seen the book itself becomes at once acquainted with its contents, and is enabled to tend more to give evidence to an undertaking than a procedure of this kind. The cost-book, as well as a duplicate, it is true, is, or ought to be, open to the inspection of the shareholders at any time, at the principal office, and at the mine, but it is not always convenient for persons, desirous of being associated with mining matters, to go to either one or the other, and consequently it is inconvenient, as a general rule, to have the provisions of the cost-book made known to the purchasers, and there seems no better mode of doing so than by an indorsement on the transfer.

Having stated that the shareholders under the cost-book form an extended partnership, it is necessary to show that they are removed from the liabilities and responsibilities attendant on such a position under ordinary circumstances. This is done by the rules laid down in the cost-book. Usually a meeting of the shareholders is held once in every two months, at which the accounts are laid before them and a call determined on, to meet the expenses of the two succeeding months. Any shareholder can then put an end to his responsibility, by paying his quota of expenses and retiring. This custom of procuring necessary funds for carrying on operations leads, however, to much trouble and inconvenience, and it has consequently become the practice, especially with modern constituted undertakings, to make a call sufficient to meet the expenditure for a considerable time, the fund so raised being placed in the hands of trustees or a committee, and a monthly or two-monthly statement of the affairs of the undertaking forwarded to every shareholder individually, so that the exact position of things is known at these periods to all concerned, and persons can continue or retire as they think fit.

In all cost-books the power of the shareholder to retire is clearly set forth, and usually in words to the effect, that any "adventurer, or shareholder, may determine his or her responsibility or liability, with respect to the affairs of this mine, upon his or her giving notice, in writing, to the pursuer of the company for the time being, or his or her desire of retiring from the company, and also upon depositing with said pursuer the share or shares he or she is entitled to, and the receipting of all claims or demands on the company in respect to such share or shares."

As evidence, however, of the safety of the Cost-book System, and the total absence of power on the part of the pursuer, or any body else, to do any act not provided for by the rules, or the resolution of a special general meeting, it will be well to allude to the deed given at the last Bodmin Assizes. It was in respect of an action brought by bankers at Penzance against two shareholders of the Wheal Providence Mine, for the sum of 3000*l.*, advanced by them (the bankers) to the pursuer of the company. It was proved that no authority was given in the cost-book to the pursuer, or any body else, to open an account or borrow money; that the act of the pursuer was at variance with the rules of the cost-book; and, consequently, a verdict was given for the defendants—to the effect, in fact, that the shareholders were not liable.

The pursuer is the principal person, both in position and labour; he keeps all accounts, and manages generally the whole financial affairs of the company. The cost-book and all documents are under his special care. The duty of the committee is to examine all accounts, and to co-operate with and check the conduct of the pursuer, who is always a member of the committee, and usually presides at public and other meetings of shareholders—being the person best enabled to answer questions and furnish every information. He is, in fact, the representative of the great body of shareholders; and it is to him they look for a proper administration of the affairs in every particular—while the shareholders themselves form virtually the general direction by the rules which they lay down.

Under the Cost-book, stamps are not required for the transfer of shares—at least they have never been used hitherto, although millions of property in mines have been transferred. We make this allusion, because it is imagined by some that a transfer is not valid unless on a stamp. The legislature makes no reservation in its acknowledgement of the Cost-book Principle; and thereby, of course, admits that portion of this long-established custom, which has been of so standing a custom, which, we have before observed, has existed from the very earliest period of this country's history.

Current Prices of Stocks, Shares, & Metals.

MINES.—There has been a slight improvement in the mining share market since our last, and many shares have changed hands—at the same time, the market is not so firm as we could desire, or even anticipated. Buyers generally appear to be looking towards dividend paying mines, as an investment more than in the speculation attendant on new mines; and, perhaps, the present period affords a better opportunity than has been known for many years—the market prices being, in the majority of mines, not more than eight to 10 years' purchase. The accounts from the foreign mines by the last arrival being of a most cheering character, has created a demand, which in a more propitious state of the money market, would have caused a considerable advance in price. The following shares have been done since our last:—Wheal Trelawney, Holmbush, Tamar, South Trelawney, South Caradon, South Maria, Devon and Courtney, Wheal Walter, Wheal Conard, Lamerhoe Wheal Maria, Seton, Trethellan, East Tamar, Louisa, West Wheal Jewel, Kirkcubright, Wheal Norlan, North Wheal Robert, Wheal Trelawney, Wheal Williams, Callington, Bolland, Copiapo, Rel Del Monte.

RAILWAYS.—The railway share market continued, up to Wednesday, in the same dull state as the week previous, the tendency being generally to a decline; on Tuesday there was a little stir in the foreign market, one house purchasing rather largely the Constituted of France, at something over the quotations; during the last two days, however, there has been a little more demand for scrip, and, in several cases, a small improvement might be noticed; there has, however, been nothing to indicate a return to a really active and healthy state of things. In the Dutch-Rhenish, Dendre Valley, and other foreign lines, which are in abeyance, prices are merely nominal.

MEETINGS.—*Leicester and Bedford:* under the Dissolution Act; a deputation appointed to wait on the Great Northern Railway Company, as to entering into some arrangement for continuing the scheme.—*Dublin, Dundrum, and Rathfarnham:* a meeting to affix the seal to the register of proprietors; a stormy discussion ensued, a large portion of the holders objecting to carry on the project.—*Birmingham, Lichfield, and Manchester:* to confirm the sale of the line to the North-Western Company, the latter to pay 16,000*l.* towards the Parliamentary expenses, and a bonus of 20,150*l.*, which would yield a premium of 2*l.* a share.—*Manchester and Lincoln Union:* first annual meeting; from the accounts it appeared that the deposits on 43,220 shares were 90,762*l.*, and the expenditure, 15,451*l.* 5s. 3d.—leaving balance at bankers, 75,310*l.* 14s. 9d.—*Manchester and Leeds:* 20th half-yearly; the receipts, after deducting working expenses, were 95,442*l.*, which, with the former surplus, makes 146,110*l.*; out of this they recommended a dividend of 8*l.* per cent. for the half-year on all the shares, which, with interest owing, 28,054*l.*, left a balance of 94,484*l.* 5s. 4d.—*West London:* Half-yearly; the Great Western and North-Western Companies had not worked the line, though they had powers to carry it to the Thames; a bal-

ance of 200*l.* remains; a resolution was passed calling upon the two lines to work this railway efficiently.—*Southampton and Manchester:* a meeting took place at Southampton, to consider the position in which the town was placed by the rejection of this bill; but nothing definitive was adopted.—*Reading, Guildford, and Reigate:* First meeting; the capital raised was 800,000*l.*, in 40,000 shares, of 20*l.* each; the expenses had been 87,297*l.* 16s. 5d., leaving a balance of 56,069*l.* 17s.—*Leicester and Bedford:* adjourned meeting from previous Saturday; deputation to Great Northern had an interview with Mr. Hudson, who declined to treat, as he intended to adopt the best line between Leicester and London; it was, therefore, decided to dissolve without bankruptcy.—*Bandwin and Bantry:* under Dissolution Act; the amount received was 1*l.* 7s. 6d.; on 17,156 shares, amounting to 24,552*l.* 10d., and interest, 187*l.* 1s. 1d.; total, 24,689*l.* 17s. 1d.; the disbursements were 12,238*l.* 4s. 9d., leaving a balance of 12,451*l.* 12s. 10d.; they proposed to pay 5s. per share, and the remainder on closing accounts.—*South-Eastern:* to take into consideration the general business of the company; the accounts showed that the balance at disposal was 70,545*l.* 7s. 2d.; the report went at great length into the general situation of the company; the directors took power to issue bonds for 279,000*l.*, and 121,050*l.*, to carry out their several Acts, and the dividend of 17s. per share was unanimously declared. The rate of fares wanted in the report, has given general dissatisfaction in the City; other lines, reduce not increase their fares; and we shall see whether this company, with their sinuosity of lines taking passengers miles out of their way, will not be compelled to adopt a cheaper tariff.

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Closing pr. last week.	Closing pr. last night.
Aberdeen	£10	91	91
Amber, Nottingham, Boston, and Erewash Junction	21	21	21
Arraigh, Coleraine, and Portrush—25 <i>l.</i> shares	12	12	12
Birmingham and Gloucester—100 <i>l.</i> shares	100	128	130
Birmingham and Oxford Junction—20 <i>l.</i> shares	2	6	6
Bristol and Exeter—100 <i>l.</i> shares	7	86	86
Bristol and Gloucester—50 <i>l.</i> per share	30	504	504
Caledonian—50 <i>l.</i> per share	5	16	16
Chester and Holyhead—50 <i>l.</i> shares	27	26	26
Direct Northern—50 <i>l.</i> shares	21	21	21
Direct Manchester (Readington)—50 <i>l.</i> shares	21	1	1
Ditto Rastrick's	54	—	—
Dublin and Galway—50 <i>l.</i> shares	4	—	—
Dundalk and Enniskillen—50 <i>l.</i> shares	71	—	—
Eastern Counties—25 <i>l.</i> shares	147	23	22
East Lancashire	14	—	—
Edinburgh and Glasgow—50 <i>l.</i> shares	50	70	71
Edinburgh and Northern	10	104	—
Edinburgh and Perth	3	3	3
Exeter, Exe, and Dorchester—50 <i>l.</i> shares	21	21	21
Goole and Doncaster—20 <i>l.</i> shares	42	5	5
Grand Union (Nottingham and Lynn)	19	—	—
Great Southern and Western (Ireland)—50 <i>l.</i> shares	15	31	30
Great North of England—100 <i>l.</i> shares	100	230	230
Great Western—100 <i>l.</i> shares	80	140	140
Guildford, Farnham, and Portsmouth—50 <i>l.</i> shares	5	—	—
Hull and Selby—50 <i>l.</i> shares	50	104	105
Leicester and Carlisle—50 <i>l.</i> shares	25	64	63
Leicester and Bedford	22	70	70
Leicester and Carlisle	22	—	—
Leicester and Birmingham—20 <i>l.</i> shares	22	—	—
Leicester and Bedford—20 <i>l.</i> shares	22	dis.	dis.
Leicester and Tamworth—20 <i>l.</i> shares	42	dis.	dis.
Liverpool, Manchester, and Newcastle Junction	12	24	2
London and North Western	100	206	199
London and Blackwall	Av. 16 <i>l.</i> 13s 4d	8	8
London and Brighton—50 <i>l.</i> shares	50	63	62
London and Croydon—50 <i>l.</i> shares	Av. 13 <i>l.</i> 15s 8d	23	22
London and Greenwich—50 <i>l.</i> shares	Av. 13 <i>l.</i> 15s 8d	23	22
London and South Western	Av. 41 <i>l.</i> 6s 10d	72	71
London and York—50 <i>l.</i> shares	21	21	2
London, Salisbury, and Yeovil—50 <i>l.</i> shares	21	1	1
London, Salisbury, and Exeter—50 <i>l.</i> shares	21	54	—
Lynn and Ely—25 <i>l.</i> shares	15	16	16
Lynn and Dereham—25 <i>l.</i> shares	15	15	15
Manchester and Leeds—100 <i>l.</i> shares	82	116	112
Manchester and Birmingham—40 <i>l.</i> shares	42	78	77
Manchester, Bolton, and Millock—20 <i>l.</i> shares	42	12 pm.	12 pm.
Manchester and Salford	2	—	—
Midland	Stock	140	139
Ditto Birmingham and Derby	Stock	114	113
Newcastle and Berwick—25 <i>l.</i> shares	10	27	27
Newcastle and Carlisle—100 <i>l.</i> shares	100	274	274
Newcastle and Darlington Junction—25 <i>l.</i> shares	25	43	43
Ditto New (Brundling)—25 <i>l.</i> shares	25	—	—
North, Sheffield, and Boston—25 <i>l.</i> shares	Stock	136	133
Norfolk	171	38	38
North British—25 <i>l.</i> shares	45	73	73
Northern and Eastern—50 <i>l.</i> shares	21	12	12
North Kent and Direct Dover—50 <i>l.</i> shares	42	34 pm.	34 pm.
North Staffordshire—20 <i>l.</i> shares	12	8	8
Oxford, Worcester, and Wolverhampton	32	5	5
Portsmouth Direct—50 <i>l.</i> shares	32	5	5
Preston and Wyre—50 <i>l.</i> shares	50	—	—
Richmond—20 <i>l.</i> shares	5	104	—
Scottish Central—25 <i>l.</i> shares	10	7	19
Scottish Midland—25 <i>l.</i> shares	10	7	8
Sheffield and Manchester—100 <i>l.</i> shares	100	—	—
Shrewsbury and Birmingham	21	25	25
South Devon—50 <i>l.</i> shares	35	33	33
South Eastern and Dover	Av. 23 <i>l.</i> 2s 4d	434	436
South Midland—20 <i>l.</i> shares	42	4 pm.	4 pm.
South Wales—50 <i>l.</i> shares	5	4	4
Yale and Exeter	2	1	1
Waterford and Kilkenny	21	—	—
Welsh Midland	21	—	—
West Riding Union	42	21 pm.	21 pm.
Wills, Somerset, and Weymouth—50 <i>l.</i> shares	10	5	5
York and Carlisle	25	55	57
York and North Midland—50 <i>l.</i> shares	50	70	71
Ditto Selby—50 <i>l.</i> shares	30	70	71

FOREIGN RAILWAYS.

Boulogne and Arras—20 <i>l.</i> shares	10	12	13
Bordeaux and Pau—20 <i>l.</i> shares	2	—	—
Bordeaux and Pau (Mackenzie)—20 <i>l.</i> shares	2	—	—
Bordeaux, Toulouse, and Cette (Espélette)—20 <i>l.</i> shares	2	—	—
Central of Spain—20 <i>l.</i> shares	2	—	—
Dutch Rhenish—20 <i>l.</i> shares	5	6	4
East Indian	4	—	—
Great Northern of France (constituted)	5	18	18
Great Western Bengal	1	—	—
Jamshedi and South Midland Junction—20 <i>l.</i> shares	2	—	—
Lombard and Venetian—20 <i>l.</i> shares	2	—	—
Lyon and Avignon—20 <i>l.</i> shares	2	—	—
Luxembourg	4	12	12
Namur and Liège—20 <i>l.</i> shares	4	12	12
Orleans and Vierzon—20 <i>l.</i> shares	4	—	—
Orleans and Bordeaux—20 <i>l.</i> shares	4	—	—
Paris and St. Quentin—20 <i>l.</i> per share	2	—	—
Paris and Orleans—20 <i>l.</i> shares	20	—	—
Paris and Rouen—20 <i>l.</i> shares	20	—	—
Norman and Paris—20 <i>l.</i> shares	18	—	—
Sambre and Meuse—20 <i>l.</i> shares	6	—	—
Strasbourg and Basle—14 <i>l.</i> shares	14	—	—
West Flanders	4	—	—

RAILWAY TRAFFIC RETURNS.

Name of Railway.	Length (Mys).	Present act. cost.	Last Div.	Traffic Returns 1846	1845
Arbroath and Forfar	15	£142,000	2 <i>l.</i>	£719 6 11	£229
Chester and Birkenhead	15	569,362	2	953 4 0	854
Dublin and Drogheda	32	631,258	3	1346 9 11	1263
Dublin and Kingstown	16	349,736	6	250 19 4	340
Dundee and Arbroath	17	163,598	2	479 16 8	636
Durham and Sunderland	19	302,118	2	9637 13 1	504
E. Counties & North & East	143	4,099,328	5	424 15 7	327
Edinburgh and Glasgow	40	1,666,225	7	3006 13 3	2676
Glasgow, Paisley, and Ayr	51	1,104,773	2	1316 19 0	1149
Glasgow, Paisley, & Greenock	23	806,134	2	336 19 11	328
Greenock and Rochester	7	82,828	6	2190 8 9	1951
Great North of England	45	1,296,196	6	643 0 2	760
Great Western	245	8,179,960	8	4709 9 4	4492
Hartlepool	40	18,047,301	10	1431 5 2	1276

English iron is firm at quotations. Bars are much inquired for, and a considerable business has been done at 87. 10s. net cash, which sellers now refuse. The market for Scotch pig-iron has been quiet for the last week; some business has been done at 75s. cash, for mixed Nos., free on board; and 77s. 6d. for No. 1, bill at four months, adding interest. English tin is in good demand, but smelters refuse to sell at the market price, there being no stock here at present. Banca is firm at 94s. Straits sold at public sale at 92s. 6d.

WEDNESDAY.—Biddle's West Hartley 17.—New Tanfield 18.—Wylam 16 6.—Eden Main 17.—Wall's End Haswell 16 3.—Lambton 17 6.—Ships at market, 26; sold, 21.

FRIDAY.—Chester Main 16.—Hasting's Hartley 16 6.—West Hartley 16 6.—Eden Main 17.—Derwentwater Main 16.—Sidney's Hartley 16 6.—Wall's End Hilda 16 3.—Biddle's 16 6.—Lambton 17 9.—Stewart's 18.—Whitwell 16.—Kelso 17 3.—Ludworth 17 9.—South Kelso 17.—Barrett 16 3.—Ships at market, 27; sold, 19; unsold, 18.

eritic, and ready to affirm, that the thoughts were ours; and the thunder also; but a very little reflection corrected that momentary error of our judgment, and we find that the leading journal has earned our eulogy for good service done the public, both in Kent and in Cornwall.

Our readers in general, and especially those of Cornwall, will have perused with great interest the discussion, kept up in the form of letters in this Journal, as to the best method—that is, the most economical and productive method—of working the mines of Cornwall. Whatever may be the judgment formed ultimately as to the question itself, every cool looker-on—every impartial spectator—will admit the manifest adroitness with which the disputants on either side have handled their weapons. In all polemics it is the chief and crowning merit to be in close contiguity with the truth; and perhaps the next merit in order and importance is the power of bringing out, and dressing to the greatest advantage, such portions of her august figure, as reveal themselves to our judgment and perceptions. We think the parties conducting the argument have a just claim to this distinction; and, admitting this point, we do not at all admit, that their juxta-position is at all as yet made out—namely: in what manner, and with what alterations, can the mines of Cornwall be most advantageously worked. We regard the question as so eminently practical, as resting so absolutely on a round of necessities, which can be only known to those who are familiar with the daily administrative difficulties and wants of a mine, that it would be a culpable presumptuousness in us, so much as to offer an opinion. We would not foolishly rush in where angels fear to tread; but we shall endeavour to form an opinion; and one of the advantages springing from the discussion is, that it suggests points on which the judgment may satisfactorily rest itself.

We have noticed, with no kind of pleasure, the apparent personal strife between the litigants—it lowers the force, and lessens the gravity, of the argument; and we have noticed, with less pleasure, if possible, still certain observations, deprecatory on the character of the working miner: in this he has suffered, as we think, an injury; and, what is more, a wrong. We in some measure know his character—we have sat down—we have slept in their rude homesteads—we have entered into fellowship with their unlettered understandings, and their primitive tastes; and, amidst penury and privation, of which there are not many examples, we have found them honest, industrious, and cheerful—meriting more of the good things of life, and thankful for the few they have.

"Dear are those homes to which his soul conforms,
And dear those hills that left him to the storms."

This is, to our mind, a class of men that should not be sunk further down by an innuendo, or their integrity assailed by an insinuation; and we regret to notice that, in the course of the controversy, this has been their lot. We may confidently add that, addressing ourselves more directly to the great mining proprietors and adventurers, if, in any change they contemplate as to the internal economy of the Cornwall mines in general, it is any part of their scheme to lower the wages of labour—to cut down closer to the quick, the remuneration of the mining labourer. They will not only, as we humbly think, lower their real interests, and misconstrue their true mission—but be rehearsing to their loss, the conduct of that simpleton who slew the goose which was laying him the golden eggs.

It is gratifying to find that, in the numerous excursions which her MAJESTY has lately been making in the Channel, and on the south coast of England, and among the places which she has honoured with the presence of a sovereign of these dominions, Cornwall has not been forgotten. During the week her MAJESTY and Prince ALBERT have visited Falmouth, Penzance, Truro, St. Michael's Mount, &c., and highly must they have been gratified, both with the loyalty with which they were received wherever they set their feet, and with the romantic and peculiar scenery, and marks of profitable industry and enterprise, which met them at every step. They visited also the United Mines, Trenow Consols, Polberow Consols, and the Munsted Mines; and the QUEEN, accompanied by the PRINCE, after visiting the remains of the ancient feudal castle of Restormel, a former residence of the Dukes of Cornwall, proceeded to inspect the Restormel Iron Mine; they entered one of the mine carts, having been lined with green baize, in which they were drawn about 200 fathoms into the recesses of the mine, and watched with interest the methods of obtaining the ore—the PRINCE taking a turn with the pick. The whole party appear to have been highly pleased with the wonders of this western corner of Britain, and particularly with the stupendous grandeur of St. Michael's Mount, on which they remained between three and four hours.

We noticed, in the MINING JOURNAL, the particulars of a partial strike of the colliers in the neighbourhood of Cardiff, in July last, resulting in the commitment of seven individuals to Cardiff Gaol for three calendar months—the magistrates being Col. SMITH, E. M. WILLIAMS, and J. HEWITT, Esqs. The proceedings caused great excitement in the neighbourhood—it being publicly known that the warrants upon which the commitments were made were illegal, inasmuch as they did not state that the prisoners were convicted of any offence, only that they were charged with an offence, nor did they show that they were servants within the meaning of the Act 4th Geo. IV., c. 34. Mr. OWEN, of Cardiff, and Mr. DE MEDINA, of Argyle-place, were accordingly employed; and on the 13th August, applied to the LORD CHIEF BARON for one writ of habeas corpus, to bring up the body of DAVID THOMAS, for the purpose of being discharged; he was accordingly brought up on the 21st, in custody of Mr. WOOD, the governor of Cardiff Gaol, when his Lordship decided that the objection was fatal, and ordered him to be discharged. Application was then made for six other writs, for the discharge of the remaining six prisoners; summonses, however, only were issued, and the magistrates, no doubt a little piqued at their dilemma, took advantage of a delay in the service, and would not act upon them. Writs of habeas corpus were then applied for and granted; but the men were liberated previously by the magistrates—the governor endorsing on the writs that he had no such persons in custody. On their liberation, thousands of persons attended to escort them, and their solicitor (Mr. OWEN), into Cardiff; bonfires were lighted, guns fired, and the greatest joy prevailed in the consideration that the men—in this instance, at least—got the advantage of the magistrates. It is, we think, a question how far such a victory will go to render the magistrates or the law respected. If the men had really committed the offence imputed to them, the greatest care should have been taken that the necessary warrants, documents of daily composition, should have been filled up correctly; and, when the magistrates discovered their error, they should, at least, have bowed to superior authority, and not have taken advantage of a quibble.

On Wednesday morning last, the general committee of the British Association for the Advancement of Science, held their first meeting at the Town-Hall, Southampton, the chair was taken by Sir JOHN HERSCHELL, and the Marquis of NORTHAMPTON, Mr. Justice WILLIAMS, Dr. LEE, the Mayor of Southampton, and many other members of the association were present. JOHN PHILLIPS, Esq., F.R.S., read the report of the council for the present year; it appeared that the resolutions of the magnetic and meteorological conference had obtained the favourable consideration of Government; that their recommendations with respect to observatories were being carried out, and that those for India had received equal attention; that the magnetic observatory at Greenwich was permanently continued on an extensive scale; a magnetic survey of

the East India Sea had received the sanction of the East India directors, and arrangements were in progress for carrying it out; and that various other investigations were about being prosecuted in different parts of the world. The council have invitations from Oxford, Norwich, and Swansea. The report was adopted, as was also the lists of the sectional committees; when the president elect, Sir R. I. MURCHISON proposed, that, as they were to be honoured by the presence of Prince ALBERT, they should reserve a place for him, and elect him the one and only honorary member of the association; the proposition was seconded by the Marquis of NORTHAMPTON, and carried by acclamation. The town, we understand, is rapidly filling; but such arrangements have been made that, so far, there has been no difficulty of obtaining accommodation. We shall give an account of the proceedings of each of the sections as they occur, in our usual manner—more particularly those of importance connected with geology, mineralogy, chemistry, &c.

DISTRESS IN THE COUNTY CORK MINING DISTRICTS.

Amid the deplorable distress now prevalent in Ireland, as a necessary consequence of the destruction of the potatoe crop, attention, as we find, has been particularly invited to the sad condition of the mass of the inhabitants of the mining districts in the west of the county of Cork, especially in the vicinity of the mines of Gurtavallig, and throughout the promontory between the Bays of Bantry and Dunmanus, where those mines, and some valuable slate quarries, are situated. Such was the distress, bordering upon starvation, of the labouring class in this locality, that a subscription, some three weeks or a month since, was entered into by a few persons concerned in the mines, and was responded to by the mining companies of Ireland with much liberality. As far as we have learned, about 1200. was subscribed—of which sum, for the immediate relief of the poor peasantry on the promontory referred to, the landlords or proprietors of it are reported to have supplied 100. To give employment to the most destitute, it was very judiciously proposed that a road, to form a communication between both bays, and more particularly to facilitate access to the mines and quarries, should be opened, and if possible completed, to carry out an object of so much public, as well as peculiar or local, utility. Now, the land proprietors, who are all residents, and the heads of five families, receive collectively, as we are informed, about 55000. per annum from a tenantry, the majority of whom are now little better than starving, and out of this (comparatively to the real value of all the land of the promontory) enormous rental, 100. for the immediate relief of the most destitute, by employing them on a work, the advantage of which must ensue chiefly to the land proprietors themselves, is returned—it is not stated in what proportions to each—by these proprietors! On this promontory has been introduced the practice of enforcing quarterly payments of rent—a practice unprecedented, and we believe peculiar to this locality—a locality almost inaccessible heretofore, to civilisation itself, as it was literally inaccessible (until very recently) to a traveller or wayfarer, by reason of the want of roads. Yet on this promontory are exacted the highest rents, in quarterly payments, from the poorest peasantry in Ireland!!! Now, it may be asked, how it is that comparatively the highest rents in Ireland can be paid by the produce of this singularly wild, desolate, and apparently barren, though thickly populated, promontory? To this question the only solution is, as we learn, the fact, that one-half the annual rent is derived from the waters of the two magnificent bays which the promontory separates. The remarkable and indefatigable industry of its poor but honest inhabitants, on each of its shores, are exerted chiefly in the fishery, which is generally productive enough to enable them to pay, with this gift of God, to their hardy industry, the therefore, enormously enhanced rent of the land, extorted by the landlords. In this promontory there is mineral wealth, if developed by the application of capital and labour, to enrich adventurers, or companies of capitalists, and to afford ample employment in its development to the labouring population of the district. A road upon the Dunmanus shore has been recently constructed; but one on the Bantry shore, where the mines and quarries are situated, is essentially required—and, doubtless, will be one of the "public works" carried into effect, under the Act lately passed, and now in operation in Ireland, for the employment of the people upon works of palpable public utility in that country. That Act renders it compulsory on the land proprietors to repay, within a certain period of years, the funds to be advanced by the Government for the prosecution of such works; and thus, in a just and equitable, as well as politic, form, is the principle, that the "landlord has his duties to perform as well as his rights to enforce," to be practically applied for the immediate benefit of their tenantry and the ultimate benefit of their properties, if not of their posterity. One chief object in our present notice of the condition of the poor in the mining districts referred to, is to urge the propriety of different companies working mines and quarries therein to as extensive an employment of the poor in the respective vicinities, as the nature of their operations may allow. By their so doing, it may be very fairly assumed, that so far from suffering a loss, or even a reduction of their profits, in all remunerative mines, they will increase those profits—because it is a well-ascertained fact, that there is nothing like a sufficient application of labour and capital to the development of the wealth of even the most productive mines in the mineral districts of the county of Cork. The Glandore or Benduff Slate Quarries would alone require a vast accession of both to work them effectively; and in their vicinity is, as we find by the Cork papers, the most appalling distress at present prevalent. There is one remark, that in the consideration of this melancholy condition of the Irish peasantry and poor of the towns, we cannot refrain from making; and that is one of respect for—nay, of admiration of—the remarkable patience and submissiveness to the apparently severe decree of an all-wise and inscrutable Providence, with which these half-famished hundreds of thousands, or rather millions, bear the heavy calamity under which they suffer. It may not be deemed presumptuous of us to aver, that out of this calamity of the destruction of the potatoe crop—the sole food of the masses of the Irish people—a future and lasting benefit will arise. That food, only fitted for fattening hogs, or other useful domestic animals, will, as human food, be superseded by bread stuff,—and this will be an advance in civilisation in that country.

EXTENSIVE IRON RAILWAY BRIDGE AND VIADUCT.—An iron bridge, in size and magnificence, perhaps never before equalled, is about to be erected, with a corresponding viaduct across the Tyno, from Gateshead to Newcastle-upon-Tyne, for the Newcastle and Berwick Railway. The iron-work contract was let at York; there were a good many tenders, but Messrs. Hawks, Crawshaw, and Sons, of Gateshead, were the successful competitors; Messrs. Losh, Wilson, and Bell, of the Walker Iron-Works, and Mr. John Abbott and Co., of the Gateshead Iron-Works, will also take part with them in the construction of the work—Messrs. Hawks taking the castings for the approaches, and the other firms the arches for the bridge. The contractors are to make, supply, and erect, all the cast and wrought iron and wood-work for bridge and approaches, according to the designs, and under the instructions, of R. Stephenson, Esq.; it is to consist of six cast-iron circular arches, with a curved approach at each end, and will, in fact, be a double bridge; the railroad on the summit, and a carriage road and two footpaths suspended from the arches. The span of the arches will be 125 ft., supported on pillars 21½ ft. high, and 14 in. square, and the approaches from both Newcastle and Gateshead will be 251 ft. in length, and precisely similar. Two courses of 3-inch plank will be placed beneath the rails, between which will be a layer of Borrowdale's patent asphalted felt, to render them waterproof; and the carriage road beneath will be paved with wood to prevent vibration, and the footpaths plank. Every arch will be completely erected on the contractors' premises by itself, when the engineer will inspect and test its strength and fitness: the quantity of iron required will be about 6000 tons, and the contract is stated to be 120,0000. The entire cost, exclusive of land and buildings, will be 300,0000., and it is to be finished, so as to be available for public traffic by the 1st August, 1848.

PATENT WARMING APPARATUS.—This is an invention by Mr. Dell, of Woolwich, consisting of a class of apparatus, in which the heating or warming is effected through the medium of certain bodies, such as water, steam, or air, instead of the direct action of fire: it consists in enclosing the tubes, flues, &c. in suitable casings, perforated with holes, through which the cold air enters; and after coming in contact with the tube or other vessel, reissues in a heated state: they may be made in various forms: as for beds, rooms, carriages, church-pews, feet-warmers, &c. Sometimes instead of only one perforated case, two or more, with suitable spaces between, may be employed with advantage.

IRON TRADE OF SOUTH WALES.

We gave in the *Mining Journal*, of the 29th ult., a short notice of some of the large iron-works; and we now take a review of the present state of a few others, in the South Wales district; we commence with the—

CWM AVON IRON, COAL, COPPER, TIN, AND CHARCOAL WORKS.—These extensive and important works were commenced in 1820, under the direction of John Vigners, Esq., of Rose Hill, near Penzance, at which time there was no road for carriages, and no dwelling in the valley, with the exception of two or three cottages. In 1841, they were transferred to the "Governor and Company of Copper Miners in England," chartered in 1891—the principal members of which are Abel Lewis Gower, F. Ricketts, Louis Vigners, T. R. Guppy, Esqs., &c.; the works under the present company have received great additions, and now consist of the smelting of iron, copper, and tin, rolling iron and copper, making tin plates, manufacturing muriatic, sulphuric, and pyroligneous acid, naphtha, and oxalate of lead, and raising coal for consumption and sale. The number of men, women, and children, employed is about 4500, and the sum paid in wages per month is above 10,0000. The portion of the narrow and retired valley in which this large amount of labour is employed, commences about a mile from the sea. The natural beauties of the scenery are very little interfered with by smoke, the coal of the country not yielding much. The noxious fumes proceeding from the copper works are carried to the top of the highest mountain, 1000 feet perpendicular above the valley, by a flue of an area of 14 ft. by 10; by which means the vegetation of the valley, and the health of the inhabitants, are effectually guaranteed from injury. In this, as in all the other arrangements made by the successive proprietors of these works from the commencement, it appears to have been their study to do everything that a humane, just, and wise regard could dictate for the best interests and real welfare of their work-people, as well as of themselves. The bad practice, carried on in many large works, of letting men have money on account, and deferring settling day to three or four weeks at a time, under the plea of saving expense, is here avoided, at considerable cost, to as great an extent as possible. The men are divided into portions, and a certain number paid every day in the office—a supply of cash being brought by the mail from Bristol every day for the purpose; and this accommodation keeps each man's family better supplied with ready money. There is a "shop" on the premises, but it is kept entirely for the advantage of the men—there is no compulsion, and they obtain provisions cheaper than in the villages. These works are in full operation at present, like all other metallurgical establishments; more orders pour in than can well be executed, and highly remunerative prices are, doubtless, obtained.

LLYNNY IRON COMPANY AND THE MAESTEG COMPANY'S WORKS.—The former of these works was commenced in 1838, under the title of the Cambrian Company, and passed into the present company's hands—of which Dr. Bowring, M.P., is one of the principal proprietors—in April, 1844: the latter commenced in 1827, and were taken by the present company in December, 1844. Previous to falling to the present proprietors, they afforded a sad proof of neglecting the morals of the population. The houses were greatly crowded. No schools were provided by either of the old companies, except a small school kept by a female, set on foot by the Cambrian Company, about eight months before they gave up the works. The other day-schools were, one kept by an old soldier, and another kept occasionally in a Dissenting chapel by a disabled workman. Public-houses were allowed to spring up without the least control. In one part of the valley, nearly every fourth house was a public-house. In another, in the small hamlet of Cwmdu, about the upper works, there were 30 public-houses. These were constantly opened on Sundays, and at nights, with scarcely any restriction. The parish church, and the residence of the clergyman, were at some distance from the works. About five years ago, one of the proprietors of the Maesteg Works resided near them; and at that time better order was kept in the valley in many respects. Mr. Bowring, who manages the Llynny Works, thus described the state of insubordination of the colliers and miners, and their disregard of their own interests, as well as those of their employers:—"Our colliers and miners will only work three weeks out of four. They earn from 20s. to 25s. per week, working seven to eight hours. They might earn in a few weeks' work, as some of the staidier ones do, at least 30s. more. In consequence of this deficiency in the quantity they raise, we are put to expense in various ways. We are obliged to employ a third more colliers than we should otherwise require; to keep so much more work open; and to have more horses and labourers, who are idle one-third of their time. We have had frequent strikes, and have been compelled to give undue advances of wages; in some instances, we have been obliged to raise wages upwards of 25 per cent., far higher than was in the least degree justified by the price of iron." The case is now very different—the houses now built for the work-people have five rooms, a garden, and other conveniences; prizes are given for the best kept gardens, efficient schools are established at one half-penny a week from each workman, the shop has been discontinued, and it is said to be intended to set on foot a Mechanics' Institute and Reading-room. We need hardly add, that with this enlightened interest in the well-being of the people, the company are in the most prosperous state, and bid fair to be most remunerative to the proprietors for many years to come.

THE YSTALFYFERA COMPANY.—These works are situated at the head of the Swansea valley, and were commenced in 1839—J. P. Budd, Esq., being the managing director; here a great change has also taken place—schools have been established, a chapel of ease erected, and the evils of partial pay, shop credit, with other practices injurious to the workmen and their families, are being done away with; the works are, we believe, in full operation.

YNISCEDWYN.—These large works, situated also at the head of the Swansea valley, and where the late lamented G. Crane, Esq., first established the principle of hot-blast to the smelting of iron with anthracite, have been many years in existence, and have lately been increased to seven furnaces now in full blast; they are now under the management of G. Crane, Esq., who follows the footsteps of his predecessor, in devoting much zealous attention to the comfort and well-being of his workmen: boys, girls, and infants' schools, were established in 1845; and the present proprietor contemplates establishing others for the distant portion of the district—the population connected with the works extending over a distance of four miles.

NEATH ABBEY AND ABERNANT WORKS.—The former of these have been carried on for years, and schools have long been established: the latter have only been commenced about a year, and are in full operation, and a similar school has there been set on foot—they are both worked by one company.

PATENT GALVANISED IRON COMPANY.—The extensive works, now in full operation by this company, consist of the Porth Cawl, Pile, and Garth Works, having together six furnaces in full blast, and around which a large population is collecting; schools are established—and a large building, formerly used as a shop, is now being converted into an additional day-school. As we stated in our former notice, this company may now be considered permanently established, as one of the leading works of South Wales; constant employment, with liberal wages, is given to a full complement of work-people. The peculiarly durable quality of the patent galvanised iron, has become most extensively appreciated for every description of work—domestic, out of doors, agricultural, naval, fresh water and marine works; orders are daily increasing, and the highest marketable prices obtained.

The situation of the iron districts, in a commercial, physical, and moral sense, never exhibited so gratifying a prospect as at present; and is one which, we trust, no "unfavourable circumstances" will injuriously interfere with for very many years to come.

THE IRON TRADE—IMPORTANT DECISION.

NORTHERN CIRCUIT, LIVERPOOL—AUGUST 28.
ORD v. LAYCOCK.—The plaintiff, as trustee on the sequestrated estate of J. Robertson, iron merchant, Glasgow, sought to recover damages from the defendant for breach of a contract entered into with Robertson before his bankruptcy. Robertson had, through Mr. Senior, broker in Liverpool, upon the 15th of Jan. last, sold to the defendant 3000 tons of Scotch pig-iron, at 82s. 6d. per ton net cash—the payment in all April, in Glasgow, upon the receipt of orders on the makers to deliver the iron free on board, or Glasgow store-keeper's warrant. Robertson became bankrupt on 10th March; but when the contract fell to be implemented, the trustee (the plaintiff) intimated his readiness to do so, and deposited store-keeper's warrants in the hands of the cashier of the Royal Bank at Glasgow, to be delivered to the defendant on his paying the price. The defendant, however, repudiated and refused to fulfil his part of the contract. The action was, therefore, brought for the difference in the price of the iron between the date of the contract and the date at which the iron was deliverable. After proof of the contract, the plaintiff's title, the deposition of the warrants, the offer to deliver by the plaintiff, and the prices of iron at date of contract and at date when it ought to have been taken delivery of, and counsel having been heard for both parties, Mr. Justice Cresswell summed up, and stated that, although such contracts were formerly (especially by Judge Tenterden) held to be illegal, they were now held to be good. The jury at once gave a verdict for the plaintiff for the difference in price, amounting on the whole contract to 26250.

MINERAL AND METALLIC EXPORTS.—The following particulars are from the declared value of the principal exports of British produce and manufactures in the six months ending July 5, 1844, 1845, and 1846:—

	1844.	1845.	1846.
Coal and culm.....	£296,963	£430,227	£478,243
Machinery.....	344,039	344,039	555,018
Iron and steel.....	1,548,414	1,772,608	2,199,006

THE GOLD IN THE RHINE.—M. Daubrie has forwarded a paper to the Paris Academy of Sciences, on the subject of the gold that is found in the bed of the Rhine. This gentleman had already expressed an opinion, that the gold came originally from the crystalline schistose rocks of the Alps, and now communicates a series of experiments to prove that his conjecture was right.

LOCOMOTIVE IMPROVEMENTS.

SOUTH WALES IRON-WORKS, LLANELLY.—We are informed that hitherto nothing of importance has been done in Wales in the locomotive branch of engine-building, notwithstanding its abundant supply of every necessary material for that purpose; but, from the following statements which we gather, it now begins to claim an important position in the above-named branch. Those parties have just sent off a powerful locomotive-engine to Ireland, the first built in Wales for exportation, and is called "Victoria;" a second is now ready for shipment, and is called "Albert;" and next follows the younger branches of the Royal family; but what most claims our attention is, what is termed, a "swift safety locomotive-engine," now building for one of the narrow gauge lines, which the patentees guarantee shall travel at the rate of 100 miles per hour, with a load of 100 tons; and this engine will be considerably safer at that speed, than any of the present constructed engines at 45 miles per hour. To give some idea of the gigantic power of this engine, we give the following particulars:—The driving wheel is 14 ft. diameter, cylinders 22 in. diameter, length of stroke 24 in. We are informed that the patentees state, that although they adopt the 14 ft. wheel at present, they do not mean to rest there—as they intend to make them considerably larger where the bridges and tunnels will admit, as their patent principle can easily extend to 20 feet in diameter. The boiler is placed underneath the main driving axle, and is so constructed as to possess extraordinary heating surface; and thus, by placing the boiler and weight of the body of the engine underneath the axle, they entirely change the centre of gravity, and dispense with all top-heaviness: thus gaining a double point, speed and safety; they gain speed by the large wheels, and safety by altering the centre of gravity. We are informed that it is their intention to build one much larger, for one of the wide gauge lines, as soon as they obtain the consent of the directors, to run 120 miles per hour, as the wide gauge affords greater space for heating surface in the boiler. We wish them every success with their bold, and we anticipate useful, undertaking, and confess that we are somewhat surprised that it has not been discovered sooner. We shall endeavour to give, in some of our future papers, a more minute account of this engine.

ATMOSPHERIC RAILWAYS.—Although every day adds conviction to the public mind, that the advantages attendant upon atmospheric propulsion are of the most decisive character; and that, both from its safety and its economy, it ought to supersede the locomotive-engine—still the foremost of our engineers feel a difficulty in recommending it to a board of directors. The constant failures that have attended upon Samuda's plan have thrown such impediments in the way, that every one dreads to take the responsibility of a new undertaking. The organ of adhesiveness is so strongly developed in Samuda, that, notwithstanding he cannot find an inorganic compound to cause adhesiveness for his valve, he continues, with unremitting obstinacy, to search for a new cement; and has the melancholy satisfaction of being on the point of success, without ever exactly attaining it. This is deeply to be lamented, not only as it throws upon the atmospheric system generally a shade of suspicious doubt, but as it prevents the inventions of others finding fair play. It has most decidedly impeded the progress of the beautiful series of observations made by the celebrated Hallette, and has, from its occupying a ground, for which it is altogether unfitted, rendered the efforts of others quite nugatory. We had laid the unctious fondly to our souls, that Brunel would long before this have stepped forward as the champion of Hallette's system; for we know that he was struck with its beauty, and with its simplicity. He felt confident that one who thinks and acts for himself would not have waited until some one, less capable than himself, gains the reputation of leading the way to improvement. We have learned that the directors of the South Devon are about to try Samuda's plan; and they may be led probably to look forward to its ultimate success, by its answering, during the commencement of the autumnal season; but let them be upon their guard,—for although, whilst the sun has not its scorching influence upon the world below, all may go on smoothly, and delightful anticipations may be formed—yet a hot summer will as surely make them regret their credulity, as a cold winter may be likely to chill their sanguine hopes. We have from the first spoken highly of Hallette's vulcanised lips; they so thoroughly close the valve, that the desired vacuum is maintained; and we feel persuaded that, when the opportunity presents itself, his means of propulsion will be successfully tried, and that to him will be assigned the reputation of leading to perfection the atmospheric system. It is to be regretted, that no board of directors has yet had sufficient courage to insist upon their engineers trying, upon a short line, the experiment. It shows what apathy exists, and how difficult it is to move men on a track to which they are unaccustomed, and in which their own interest is not immediately concerned.

IMPROVED REVERSING APPARATUS FOR STEAM AND OTHER POWER.—Mr. P. Higson, of Clifton, Lancashire, has obtained a patent for an arrangement of machinery, to be introduced between the power employed and the lode to be driven or moved, for the purpose of an instantaneous and safe means of reversing the motion when necessary. By this machine, the continuous rotation of the motive power is allowed to proceed without interruption; and the shaft, which is in immediate connection with the load or other matter to be driven, is readily and instantly reversed as occasion may require. The machine consists of two shifting bevil-wheels on the centre of a shaft, with accompanying friction drums, or cones; on the axis of the water-wheel, or attached to the end of the crank shaft of a steam-engine, is a bevil-wheel made to fall in gear with both these bevil-wheels on the shaft of the reversing apparatus; and it follows, that while the first moving power is unceasingly and uninterruptedly continuing its motion in the same direction, by shifting either of these wheels into gear, the load is moved in either direction required. The machinery for effecting this movement expeditiously and safely, appears well calculated for the purpose—but cannot be described without a diagram.

METROPOLITAN IRON AND STEEL COMPANY.—The manufacture of iron and steel in London, on a large scale, from broken, cast, scrap, and every description of low-priced old iron, is one which would appear to offer a most profitable speculation; many parties there are who, as small foundries—merely remelting for the purpose of casting small goods—realise large profits; and this company is formed for the purpose of carrying out the principle in its most remunerative form—by raising an ample capital—adopting all the improvements which science has given to our metallurgical knowledge—and thus produce wrought-iron and steel, possessing 20 per cent. in ductility and strength more than those metals produced in the ordinary manner. We are assured that, after the most careful inquiries and investigations by gentlemen intimately connected with the minutiae of the iron trade, that London alone is capable of furnishing a most abundant supply of old scrap, &c., for supplying a sufficient number of furnaces to return a very large per centage to the proprietors; and there certainly is no doubt that markets for the manufactured article could at all times be secured. We are informed that many practical engineers think very highly of the project, and that several have had in contemplation the erection of furnaces on their own account, for the purposes of carrying out the very intentions of this company; and as, in the whole history of the iron trade, a more favourable period could scarcely have occurred—from the great demand, the alteration in the American and other foreign tariffs, and the favourable price, which is almost certain to be permanent—there appears every prospect of a profitable result. The capital is 200,000l., in 10,000 shares, of 20l. each; deposit 2l. per share.

MINERAL DISTRICTS IN FRANCE.—Having, in a former Number, referred to the first part of a report of the Engineers of Mines of the mineral discoveries in France in 1845, we now give, from a continuation of that report, a description of the resources of the several departments, from which it will appear that—at least, until much larger discoveries can be made—recourse for many years hence to other countries must be had for coal, as well as the principal metals. From this return, we find that the department of the *Arriege* has some silver, copper, lead, and zinc ores, in small quantities.—*Ande*, veins of sulphuret of lead, not rich.—*Cantal*, several beds of ore of antimony.—*Correze*, a vein of argentiferous galena.—*Corseica*, a bed of sulphuret of antimony, which has already yielded between 400 and 500 metrical quintals of ore, of excellent quality.—*Dordogne*, some ore of manganese.—*Gard*, several beds of calamine, blende, and galena.—*Upper Garonne*, a few veins of argentiferous galena, containing a small portion of gold; this galena is so rich in silver, that 100 kilograms yield 180 grammes of silver.—*Herault*, a vein of argentiferous galena, of considerable thickness; it is crystallised in small facets, containing a proportion of silver.—*Loire*, veins of sulphuret of lead and antimony.—*Lot*, several

beds of calamine, of excellent quality.—*Puy de Dome*, the metalliferous veins are chiefly zinc, with silver and gold; for working which, concessions have been applied for to Government.—*Upper Pyrenees*, manganese.—*Lower Rhine*, several very rich veins of ore of antimony, partaking of a double sulphuret of antimony and iron, resembling "berthierite."—*Rhone*, a vein of sulphuret of lead.—*Var*, manganese: to work which a concession is requested.—*Vooges*, veins of lead, copper, silver, and zinc, but in small quantity. With respect to anthracite, coal, and lignite, nothing has been found, but a rather extensive bed of the latter—while, in 18 departments, the most minute researches have been made; but the returns prove that very few would prove profitable speculations to the explorers, and official advice has been given to that effect to the Government.

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

In the month of July last, the quantity of coal entered at the Custom-Houses was 2,604,095 metrical quintals "arrived," 2,491,859 "acquitted;" in the corresponding month of 1845, the quantities were—2,773,782 metrical quintals arrived, 2,692,797 acquitted; of 1844, 2,045,318 arrived, 2,073,179 acquitted. Of cast-iron, during the month of July last, the quantities were—115,216 metrical quintals arrived, 90,136 acquitted; in the same month of 1845, 20,277 metrical quintals arrived, 52,434 acquitted; 1844, 47,882 arrived, 1424 acquitted; 1845, 1611 arrived, 2688 acquitted; 1844, 149 arrived, 175 acquitted. Lead—July, 1846, 45,183 metrical quintals arrived, 35,963 acquitted; 1845, 20,217 arrived, 16,503 acquitted; 1844, 37,601 arrived, 29,571 acquitted. Zinc—July, 1846, 9433 metrical quintals arrived, 8933 acquitted; 1845, 19,352 arrived, 22,125 acquitted; 1844, 16,922 arrived, 16,611 acquitted. For the first seven months of the present year, the returns stand as follows:—Coal, 12,721,193 metrical quintals arrived, 12,142,512 acquitted. First seven months of 1845, 13,179,463 arrived, 12,567,874 acquitted; same period, 1844, 10,173,120 arrived, 10,103,661 acquitted. The amount of duty received in the present year was 2,897,673 fr. During the first seven months of 1846, the importation of copper was—33,359 metrical quintals arrived, 37,127 acquitted; 1845, 57,191 arrived, 58,353 acquitted; 1844, 32,992 arrived, 37,956 acquitted. Tin—8116 arrived, 7135 acquitted; 1845, 10,974 arrived, 1844, 10,023 arrived, 10,741 acquitted. Cast-iron—1846, 589,182 metrical quintals arrived, 510,529 acquitted; amount of duty received, 2,891,841 fr.; 1845, 328,399 metrical quintals arrived, 331,474 acquitted; 1845, 332,727 arrived, 333,037 acquitted. Lead—1846—126,303 metrical quintals arrived, 114,838 acquitted; amount of duty received, 637,834 fr.; 1845, 108,997 metrical quintals arrived, 818,825 acquitted; 1844, 146,593 arrived, 116,524 acquitted. Zinc—1846, 53,093 metrical quintals arrived, 53,925 acquitted; amount of duty received, 39,303 fr.; 1845, 70,711 metrical quintals arrived, 78,066 acquitted; 1844, 81,661 arrived, 80,840 acquitted. At the end of July, in the present year, there remained in bond in the *entrepôt* 1004 metrical quintals of copper; 662 tin; 90,897 raw cast-iron; 29,270 lead; 357 zinc.

In this country all mines and mineral possessions under ground are the property of the Government, and are leased out to private companies and individuals at a fixed rent of 10 fr. for each square kilometre, with a percentage on the products of each mine, varying according to circumstances, but in no case exceeding 5 per cent. In 1845, the fixed rent of 10 fr. the square kilometre yielded 7115 fr. 96 c.; the per centage, 320,539 fr. 70 c.—total, 391,698 fr. 66 c.; and with the additional *decime* (which, though a war tax, is always levied) of 39,169 fr. 86 c., a grand total of 430,868 fr. 52 c. This sum shows an increase over the rental of 1844 of 60,965 fr. 42 c.

Returns issued by the Custom-House show that the total importation of coal, in 1843, was 15,072,820 metrical quintals; 1844, 16,022,678; 1845, 29,122,818. It will be observed, that the increase is very remarkable. Of raw cast-iron the importations were—1843, 422,069 metrical quintals; 1844, 531,156; 1845, 556,485; iron, in bars—1843, 74,046; 1844, 71,604; 1845, 69,851; copper—1843, 78,822; 1844, 66,437; 1845, 95,704; lead—1843, 192,835; 1844, 193,937; 1845, 185,918; zinc—1843, 108,590; 1844, 123,850; 1845, 136,719. It will be recollected, that in the quotations made in preceding letters from the reports of the mining engineers of the Department of Public Works, some not inconsiderable quantities of iron were put down as "exported." The returns of the Custom-House make no mention of any such exportation; and I presume that, with such a scarcity of iron as exists here, the Government would not allow any to be sent out of the kingdom without payment of duty. The only mention of "exportations" in the Custom-House returns, that have any relation to mining industry, is the following:—Exportations of articles (*ouvrages*) in cast-iron, iron, copper, lead, tin, zinc—1843, 53,649 metrical quintals; 1844, 70,390; 1845, 68,250.

St. Dizier letters of the 3d inst. state, that the furnaces, *à fers battus*, produce very little, on account of the scarcity of water, notwithstanding they have plenty of orders. The sales of wood, belonging to the King, went off at a trifle less than those belonging to the Duc de Bourdeaux; the *futaies* fetched 10 and 11 fr. the *decistère*—one lot went at 12 fr.; the *taillis* went at 14 fr. and 15 fr. the double *stère*, and some were even dearer. Some descriptions of wood were left by purchasers to the ironmasters, in particular relation with the King's agents.

The mining engineers of the Government do not content themselves with rendering every assistance in their power to persons engaged in mining enterprise; but they visit foreign countries, in which any useful information, relative to mining, or the treatment of minerals, is likely to be gained. In 1845 they visited Sweden, to examine the mines in which the ores, from which are manufactured the superior qualities of steel, are found; as also to study the Swedish manner of treating minerals, of preparing and conveying fuel to furnaces, &c.; they also visited and examined the copper mines of *Nasakoppberg*, *Fahlun*, and *Averta*; in Norway they visited and examined the silver mines of *Kongsberg*, and other establishments; and in Sweden and Norway the working and treatment of ores of iron, copper, lead, and silver. In the north of Germany they visited the copper establishments of *Mansfeld*, the lead, copper, and silver mines of the *Hartz*, the steel works of *Westphalia*, the zinc works of *Stolberg*. In Spain they examined the working of the coal deposits of *Ogassa* and *Surroa*, near *Campredon*, in *Catalonia*. In Belgium they went to examine a new machine for quitting and descending mines and coal-pits; and, on another occasion, to examine the zinc works. They went also to Greece, to study the draining of the Lake *Topaliss*, the deposit and working of sulphur in the island of *Visto*, and the deposit and working of lignite in the *Euboe*.

A letter from Washington, published in the *Constitutionnel*, states that the Americans are by no means so alarmed at the prospect of large importations of coal and iron taking place, in consequence of the alterations in the tariff, as has been represented. Even the ironmasters, and others connected with mining industry, feel no dread of European competition; for they think that the immense demand which exists in Europe for coal and iron, will keep up the price of those articles to the level of the native products of the United States. Your readers will compare the statement of the *Constitutionnel* with those of the London journals, and judge which is the more deserving of credit.—*Paris, Tuesday.*

COMPARATIVE POSITION AND PROSPECTS OF THE IRON-WORKS OF FRANCE AND BELGIUM.—We have received an elaborate memoir, by M. Hector Rigaud, forming a comparison of the cost of the various materials used in the manufacture of iron in France and Belgium; from which we give the following:—From the department of the *Marne*, in France, the principal portion of the metal is sent to St. Dizier, the chief market for that part of the country. The ores used are the hydrated oxide of iron, the argillaceous oxide, and some small portions of carbonates: three men can dress and wash 15 wagon loads a day, which produce from 5s. 6d. to 8s. per 1000 kilograms—the price varying with respect to carriage. Charcoal for the smelting costs from 6s. 8d. to 7s. 6d. the 2 cwt. delivered free; the fluxes, &c., used are obtained from the neighbourhood at moderate cost; the average quantity of metal made by each furnace is 6000 lbs. per day—those in full blast about 2,600,000 lbs. of cast metal per annum. Prussian coal is delivered at *Sarrebruck* at 6s. 8d. per 2000 lbs.—but the land carriage, and that up the *Moselle* to the works, brings it to 2l. 4s. 2d. the 100 kils. The average cost per 1000 kils. of finished iron is 13l. 12s. 6d. In the department of the *Upper Marne* alone there is estimated to be used 150,000,000 lbs. charcoal annually. In Belgium the cost of finished iron is only 15s. per kil.; this may be accounted for from fuel of every description being abundant and cheap; and Belgian iron can be delivered in Paris at 17s. 6d. per 2 cwt., while France cannot supply it under 24s. 2d. The situation of her mines, and the facilities of water carriage, give this advantage over the latter, in addition to the abundance of her fuel and ores.

NOTICE OF THE COPPER AND TIN RAISED IN CORNWALL.

By ROBERT HEWITT, Esq., Keeper of Mining Records.

[Continued from last week's Mining Journal.]

Intimately connected with the progress of mining in Cornwall is the introduction and gradual improvement of the steam-engine. Before its introduction, the lift or force-pump was employed in the shallow mines; whilst, from those which were deeper, the water was drawn out in buckets or barrels, raised to the surface by means of a wheel worked by horses. In many of the mines the chain-pump, fixed on stages at different depths, was used; and where water-power could be obtained, it was eagerly applied by means of large wheels to give motion to pumps fixed in the shafts of the mines. Up to about the year 1700, few of the wheels employed were more than 12 ft. in diameter, and there was not any whose diameter exceeded 15 ft. Mr. John Costar, of Bristol, appears to have been the first person who introduced larger wheels than those; and to many of the Cornish mines he applied water-wheels of 30 to 40 ft. diameter, with great success.

About this time, attempts were made to introduce into the Cornish mines machines for raising water by the agency of steam, but without success. Savary tried hard to induce the Cornish miners to adopt his invention "of raising water by the impellent force of fire;" but many objections were raised against the practical application of his engine, and it does not appear to have been ever introduced into Cornwall.

Dr. Pryce, in his *Mineralogia Cornubiensis*, says—"Capt. Savary was the first who erected an engine in the form we have since had them, and which has been lately improved by Mr. Blakey, though not to a degree of power sufficient to unwater a deep mine."

The first steam-engine erected in Cornwall appears to have been set to work in 1712 or 1713, at Huel Vor, a tin mine in Breage. Whether this was Savary's or Newcomen's is doubtful; but it was, in all probability, Newcomen's, whose engine was brought into use in 1712—and from that period became generally employed, and has been since known under the name of the *Old Atmospheric Engine*. The second engine was erected at Huel Fortune, in Ludgvan, in 1720.

The progress of the steam-engine in Cornwall was, however, exceedingly slow; for, except the two above-mentioned, we do not hear of any having been erected for several years—indeed, Pryce, in his *Mineralogia Cornubiensis*, states, that 36 years before he wrote (1778), the county had but one fire-engine.

The immense advantage derived from the improvements introduced by Bolton and Watt, led to the introduction of steam-engines, by degrees, into most of the Cornish mines; and, since the adoption of the system of reporting the duties of these engines, a considerable advantage has been gained. The following table will show the gradual manner in which this improvement has taken place:—

A Table showing the duty performed by Steam-Engines in Cornwall; also the average and highest duty performed by the best Engines in each monthly report.

Yrs.	Highest Duty performed.	Name of Mine whose Engine gives highest duty.	Average monthly duty of the best Engines.	Average monthly duty of all the Engines reported.	No. Engines reported.	COALS CONSUMED.—Av. No. of bushels of 94 lbs. per month.	Bushels by each Engine per month.
1813	29-76	Stray Park	26-65	19-45	24	—	—
1814	35-0	"	32-0	20-53	29	—	—
1815	34-1	"	30-52	20-52	35	—	—
1816	40-74	Dolcoath	32-4	22-90	32	—	—
1817	44-2	"	41-6	26-50	31	—	—
1818	42-6	"	39-3	28-43	37	—	—
1819	48-6	"	40-0	30-25	37	—	—
1820	48-6	"	41-3	28-73	37	—	—
1821	46-6	"	42-8	28-22	39	—	—
1822	44-16	Consolidated	42-5	28-88	45	—	—
1823	45-98	"	42-12	28-15	45	—	—
1824	46-76	Polgoth	43-5	28-32	45	—	—
1825	53-95	"	45-4	32-0	50	—	—
1826	49-97	Huel Vor	45-2	30-48	48	—	—
1827	67-09	Consolidated	49-67	32-1	54	—	—
1828	87-04	Huel Towan	76-07	37-3	47	—	—
1829	81-99	"	76-23	41-22	52	—	—
1830	77-99	"	78-88	43-35	55	—	—
1831	80-08	"	74-91	44-7	54	81,867	1489
1832	91-35	Huel Vor	79-29	44-4	60	83,480	1346
1833	88-50	"	83-30	46-0	58	88,321	1503
1834	97-85	Fowey Consols	86-25	46-96	57	78,067	1363
1835	95-76	"	91-67	46-45	66	81,979	1225
1836	97-59	"	89-59	45-61	71	101,846	1405
1837	91-98	"	87-08	47-46	70	106,275	1509
1838	91-59	"	84-88	47-94	70	112,631	1566
1839	83-17	Godolphin	62-29	48-88	74	129,801	1740
1840	85-28	Fowey Consols	81-80	49-73	58	203,699	1746
1841	101-71	United Mines	95-23	60-99	51	89,406	1733
1842	107-49	"	99-26	61-62	45	84,862	1848
1843	105-71	"	99-35	65-23	40	72,913	1811
1844	98-72	"	94-89	54-73	35	62,292	1763
1845	96-0	"	91-2	55-64	36	62,148	1715

A detailed account of the progress of the steam-engine, towards its present state of perfection, will be found in Taylor's *Records of Mining*, and in *A Treatise on the Cornish Pumping-Engine*, by W. Pole, F.R.S., &c.

* *Cornwall's Geological Transactions.*—Newcomen's first engine was erected at the collieries in Warwickshire, 1711.

† The portion of this table, to the end of the year 1838, has been already published by John Taylor, F.R.S., &c., in the *Records of Mining*.

ADDITIONAL NOTE.
In *A New Description of England and Wales*, by Herman Moll, geographer—edition, 1724—the following passage occurs:—"About five and thirty years ago, Sir Gilbert Clerk, who was chymically inclined, coming into this county, and finding this mudick, or copper ore, to be of value, he began to smelt it; however, not being able to bring it to due perfection, some that were his agents erected smelting-houses in Bristol and Redbrook; and, improving yearly in their work, we have now as good copper in England as in Sweden, and our country affording plenty of *Lapis Calamineus*, we make as good brass as in any part of the world; and 'tis computed that no less than a hundred thousand hands are one way or other employed in working and manufacturing this ore." (p. 18.)

FOREIGN SALVAGE OPERATIONS.—A prospectus with the above application is about coming before the public, having for its object the raising of sunken or wrecked vessels, by the adoption of Austin's patented apparatus. The feasibility and trials of the patent induced the formation of a company in 1844; and, although an adequate capital was raised for the carrying out of the views of the Universal Salvage Company, they are now rendered powerless by the wasteful expenditure of upwards of 17,000l., as well as their neglect in the fulfilment of the covenants of contract with the patentee. Further particulars of the present proposed company will shortly be laid before the public, although we learn that one-third of the proposed capital is already subscribed for.

AN IRON FOUNDRY IN SOUTH AMERICA.—Rode with Livingston to see the iron-works of the *Bakalatas*, and found them well worthy a visit. The construction and management of the apparatus, which, as might be expected, was of a most primitive and simple order, was as follows:—An oval hole, about 6 ft. long, 2 ft. deep, and 2 ft. broad, was divided in the centre by a clay kiln, some 3 ft. high. In this kiln successive layers of charcoal and iron-ore (the oxide of iron dug in the adjacent hills) were placed. Two men sat in the holes, one on each side the kiln, and each held in his hand two goat-skin bellows—the nozzles of which were made of horns, and inserted in holes at the base of the kiln: by these means a continuous blast was kept up. The bellows were merely leather bags, made to open and close at their mouths by two parallel bits of stick, like the mouth of a carpet-bag. A circular fence enclosed the whole from public view—for these works were kept secret from all but the initiated, and the forging art is confined to certain families. Moselel, their king, has been refused an insight into them. While men are supposed already to understand the art; and, when attended by a missionary, are readily disposed of pure metal, is wrought into form with stone hammers and anvils. Tunal Cain must have made much greater proficiency in the art. The smiths are very superstitious, and use many herbs as charms, or "medicine," for the iron, during their labour. Simple, however, as is this process, the original discovery that the ore could, by the medium of fire, be made available to the service of man, is singular, amongst men living so entirely in a state of nature. Hoes, knives, spears, hatchets, &c., are thus manufactured. A whole day's work does not yield more than a few pounds of iron, and it is only during one or two months in the year that it is lawful to work.—*Life in the Wilderness.*

EXPERIMENT ON SHOT ON IRON.—The very interesting experiments of shot upon an iron target, fixed with the patent kamptulicon, invented by Lieut. George Walter, of the Royal Marines, and furnished at his own expense, took place, a few days since, at Woolwich Marshes, in the presence of Capt. Superintendent Honston Stewart, C.B., and a party of naval, military, and civil, as well as private, gentlemen. The following is an account of the trials:—A target of iron, five-eighths of an inch thick, prepared in the Woolwich dockyard factory, and lined with Lieut. Walter's kamptulicon, a compound of India rubber and cork, to the thickness of about 9 in., was the object experimented upon by a 32-pounder. The cannon was charged with 10 lbs. of powder and a 32-lb. shot, and fired at a distance of 40 yards, when the shot passed through the whole thickness, and fired at a distance of 60 yards, when the shot passed through the whole thickness, and fired at a distance of 80 yards, when the shot passed through the whole thickness, and fired at a distance of 100 yards, when the shot passed through the whole thickness, and fired at a distance of 120 yards, when the shot passed through the whole thickness, and fired at a distance of 140 yards, when the shot passed through the whole thickness, and fired at a distance of 160 yards, when the shot passed through the whole thickness, and fired at a distance of 180 yards, when the shot passed through the whole thickness, and fired at a distance of 200 yards, when the shot passed through the whole thickness, and fired at a distance of 220 yards, when the shot passed through the whole thickness, and fired at a distance of 240 yards, when the shot passed through the whole thickness, and fired at a distance of 260 yards, when the shot passed through the whole thickness, and fired at a distance of 280 yards, when the shot passed through the whole thickness, and fired at a distance of 300 yards, when the shot passed through the whole thickness, and fired at a distance of 320 yards, when the shot passed through the whole thickness, and fired at a distance of 340 yards, when the shot passed through the whole thickness, and fired at a distance of 360 yards, when the shot passed through the whole thickness, and fired at a distance of 380 yards, when the shot passed through the whole thickness, and fired at a distance of 400 yards, when the shot passed through the whole thickness, and fired at a distance of 420 yards, when the shot passed through the whole thickness, and fired at a distance of 440 yards, when the shot passed through the whole thickness, and fired at a distance of 460 yards, when the shot passed through the whole thickness, and fired at a distance of 480 yards, when the shot passed through the whole thickness, and fired at a distance of 500 yards, when the shot passed through the whole thickness, and fired at a distance of 520 yards, when the shot passed through the whole thickness, and fired at a distance of 540 yards, when the shot passed through the whole thickness, and fired at a distance of 560 yards, when the shot passed through the whole thickness, and fired at a distance of 580 yards, when the shot passed through the whole thickness, and fired at a distance of 600 yards, when the shot passed through the whole thickness, and fired at a distance of 620 yards, when the shot passed through the whole thickness, and fired at a distance of 640 yards, when the shot passed through the whole thickness, and fired at a distance of 660 yards, when the shot passed through the whole thickness, and fired at a distance of 680 yards, when the shot passed through the whole thickness, and fired at a distance of 700 yards, when the shot passed through the whole thickness, and fired at a distance of 720 yards, when the shot passed through the whole thickness, and fired at a distance of 740 yards, when the shot passed through the whole thickness, and fired at a distance of 760 yards, when the shot passed through the whole thickness, and fired at a distance of 780 yards, when the shot passed through the whole thickness, and fired at a distance of 800 yards, when the shot passed through the whole thickness, and fired at a distance of 820 yards, when the shot passed through the whole thickness, and fired at a distance of 840 yards, when the shot passed through the whole thickness, and fired at a distance of 860 yards, when the shot passed through the whole thickness, and fired at a distance of 880 yards, when the shot passed through the whole thickness, and fired at a distance of 900 yards, when the shot passed through the whole thickness, and fired at a distance of 920 yards, when the shot passed through the whole thickness, and fired at a distance of 940 yards, when the shot passed through the whole thickness, and fired at a distance of 960 yards, when the shot passed through the whole thickness, and fired at a distance of 980 yards, when the shot passed through the whole thickness, and fired at a distance of 1000 yards, when the shot passed through the whole thickness, and fired at a distance of 1020 yards, when the shot passed through the whole thickness, and fired at a distance of 1040 yards, when the shot passed through the whole thickness, and fired at a distance of 1060 yards, when the shot passed through the whole thickness, and fired at a distance of 1080 yards, when the shot passed through the whole thickness, and fired at a distance of 1100 yards, when the shot passed through the whole thickness, and fired at a distance of 1120 yards, when the shot passed through the whole thickness, and fired at a distance of 1140 yards, when the shot passed through the whole thickness, and fired at a distance of 1160 yards, when the shot passed through the whole thickness, and fired at a distance of 1180 yards, when the shot passed through the whole thickness, and fired at a distance of 1200 yards, when the shot passed through the whole thickness, and fired at a distance of 1220 yards, when the shot passed through the whole thickness, and fired at a distance of 1

Original Correspondence.

IMPROVED MANUFACTURE OF STEEL.

Sir,—As a constant reader of your very valuable Journal, I beg leave to present a few observations, not on the question so long debated with us about the free admission into France of foreign iron, but on a fact mentioned on that occasion by a celebrated professor of mineralogy. "It is stated (says he), that British iron manufacturers are tributary to Sweden and Norway of about 550,000l. sterling for iron, first marks, yearly and dearly bought for their cemented and cast-steel." Now, it is a known fact, in England as well as in France, that England possesses in great abundance—indeed, with profusion—rich iron ores (such as we call *fers earbonates*, *oligistes*, *spathiques*, and *hematites*), with which she could easily free herself of that tribute. These ores, on account of their very richness, have, till now, been generally neglected, and yet they are of such a nature as to make steel of the first quality. By a new process, iron stone is indistinctly and immediately reduced to steel, either natural or cast. The economy is evident, as there is no more blast furnace, nor firing, nor puddling, nor cementation. M. Lecour, a metallurgist, in Paris, will convince manufacturers of the efficacy of his process, if they would send him (not more than a quintal at a time, Rue des Saints Pères, No. 1, Paris) stone ores, as above described, and engages to prove that it is easy to obtain ingots and lumps of cast or natural steel, which would be submitted to comparative tests with any British or German steel.

Rue de Navarin, Paris, Sept.

B. FAULLETT.

MANUFACTURE OF IRON—FOREST OF DEAN.

Sir,—Referring to some remarks in your last Number, as to the fact of most of the best situations for iron making being already occupied, I beg leave to draw the attention of your readers to an advertisement you have inserted, respecting the Park Hill Mines, in the Forest of Dean. There does not exist a finer situation for the erection of from two to six blast furnaces, for the supply of which the mine ground is of ample extent. The principal, a six feet vein of coal, possesses the advantage of producing a beautiful and pure coke from the large coal; whilst the small coal may be converted into hard and compact coke in suitable ovens. The three other veins are well adapted for firing boilers, stoves, &c.; and one of them—viz.: the yard vein—is highly bituminous, and makes coke of the finest quality. There is a most abundant supply of water, sufficient for supplying the fire-irons of six or eight furnaces, besides the engines; and it possesses the advantage of issuing direct from the limestone formation, so that in the hottest season of the year its temperature is not raised, and its excessive coldness is most advantageous for giving the full effect of a condensing engine. The only drawback is from the distance which intervenes between the coal and the vein of iron ore, which it would require a heading of considerable extent to overcome; but, whilst this heading was in progress, a supply of iron mine might be obtained on easy terms from mines already opened in the vicinity. The coke would cost at the furnace mouth about 9s. per ton of dry coke; the iron mine, delivered into the furnace yard, about 2s. 9d. per ton; and it would consist of two qualities—namely: the rich hydrate, 40 to 64 per cent.; and a calcareous ore, used in place of limestone, yielding from 15 to 40 per cent. of iron. There is, likewise, a vein of lean argillaceous ore, about eight feet thick, which forms the finest flux for fusing with the hydrate and calcareous ores. All the veins of coal and iron mine will be intersected by one drift, or adit level, and the united drainage will flow out at the site of the blast furnaces. The iron may be conveyed to the adjacent shipping port of Sydney for 9d. per ton, exclusive of a railway tonnage for three miles. Building stone is abundant on the spot, and fire-bricks are made in the vicinity; whilst several foundries exist near at hand, from whence the requisite castings might be supplied. A blast-furnace, within two miles of the Park Hill Work, is making upwards of 100 tons per week of the finest and strongest grey and foundry iron, and consuming not more than an equal weight of coals. The Park Hill Work offers to ironmasters one of the safest and most profitable investments at present before the public; and it is a situation where iron may continue to be made and sold to profit, at a season when most other iron-works are either losing concerns, or else wholly brought to a stand still.—ROBERT MUSSET: Coleford, Sept. 8.

MONMOUTHSHIRE AND GLAMORGANSHIRE BANKING COMPANY, AND THE VICTORIA IRON-WORKS.

Sir,—On reading your last Journal, I find a letter from Mr. Beaumont, and presume that by "paragraph," is meant my letter of the previous week, to which that gentleman has been pleased to make a most Jesuitical reply, following the rule of others, who, when cited before the public for malconduct, at once, and boldly too, pleads not guilty, venting upon their accuser such epithets, as malicious, false, &c. In reply thereto, I would point out the ingenious manner in which Mr. B. evades the real question—namely, the imminent peril in which the lives of the men working in the mines under the "Old Coal," at Victoria, are placed, by the crude and imperfect state of the ventilation. On this head, silence is strictly observed—Mr. B. contenting himself with saying, "our mineral agent has never advised me to discontinue the workings."

If I am to understand by this, that Mr. Beaumont denies the fact of the agent (Mr. Adams) having, in the discharge of his duties, informed him that the carrying on of these workings was attended with great danger to the lives of the men employed therein, for want of a better ventilation, and that such information was not given at all, then I join issue at once, and say that such was the fact, and undertake to prove it.

There can be no difficulty I should think in Mr. Beaumont getting Mr. Adams to join in such declaration—thus affording me the means of killing two birds with one stone. It was not the province of a mineral agent to dictate to his superior (not in knowledge of mining, certainly, in this case), the course he should pursue in the carrying on of the works—it being quite sufficient to simply set forth the facts as they existed correctly; and, if no weight or importance be attached thereto, then, in the event of an explosion, the culpability rests upon Mr. Beaumont. Mr. Adams, as I contend, having so represented the case, backed by his long experience, did virtually advise "a discontinuance of those workings."

And, Mr. Editor, let me on this point remind Mr. Beaumont of the fact of his attention having been called to the danger referred to by others than Mr. Adams, men of knowledge in mining, of integrity, and altogether disinterested in the proceedings at unfortunate Victoria, who were influenced solely by the desire of setting Mr. Beaumont right, knowing that gentleman's experience to be very slight indeed, for the discharge of the duties imposed upon him.

Mr. Beaumont next says "it never occurred to me," in event of an explosion, to turn the "Three-Quarter" water down—I never said it did. It is a pity that he should thus trumpet forth his own ignorance on a point of so much importance as that involving a question as to the best means, under the circumstances stated, of affording relief in event of an explosion. Turning down the "Three-Quarter" water would be the first and best course to adopt. Practical men know this well, and the contractor at the pit in question knew it, and, fearing an explosion, did desire the man at the "Three-Quarter" pit to so turn in the water, in event of fire. As to the salaries given, not having access to the books, my data was taken partly by guess; having ascertained the salary paid to the one, as Mr. Beaumont acknowledges correctly, I presumed that, in the case of Mr. B., an additional 100l. per annum could not be far out of the way. Suppose I stated double the amount actually paid for salaries, amounting on 100 tons per week of iron to 4s. 7d. per ton, then credit the 2s. 3d., and then I think the bank shareholders will not sing—"O be joyful." If Mr. Beaumont will only refer to my estimate of the cost of a ton of pig-iron, by looking at the two first items, he will see that I allow, instead of a seventh of rich mine, one-third of that material, thereby favouring the calculation 3s. per ton, the portions being—9 cwt. of rich mine, instead of 1 ton, yielding 33 per cent.; 3 tons 16 cwt. of poor mine, instead of 3 tons, yielding 23 per cent.

To conclude; when Mr. Beaumont has satisfactorily disposed of the specific points selected by himself, I shall have great pleasure in meeting him in your columns on the subject of cost of iron at Victoria, together with any other matters connected therewith, he may select. The elasticity of the bank as to dividends has been very prettily set forth by "An Unfortunate Shareholder," who, as well as his brethren in trouble, have my commiseration.—A LOOKER ON: Sept. 9.

LEAD AND SILVER-ORE SMELTING, AND THE REQUISITE COAL.

Sir,—I am just returned from a visit to the coal mining districts of the north, but am a mere amateur. A short time previously I had visited the south coal mining district of Wales. A friend has just called my attention to your valuable practical Journal of the 22d August last, begging me to read an article (page 358), entitled, "On the Proper Coal for Smelting

Sulphuretted Lead and Silver Ores." I have read it with pleasure, for my own experience tells me (although I am no lead smelter), that your correspondent, "J. M.—s," has treated his subject *truthfully*. I have paid some attention to the wants of smelters—not only to that of lead and silver-ore smelters (of which class I suspect, from some direct practical points, your correspondent, "J. M.—s," belongs); but I have inquired more particularly into the desiderata of the more extensive demands of the copper-ore smelter; although I expect both their "coal wants" are much the same. Nevertheless, probably, a more delicate (if I may use the term), or rather, perhaps, a more peculiar, quality of coal (judging from "J. M.—s" communication to you) may be required for smelting silver-lead ores, than is actually necessary for the smelting of copper ores.

Now, the whole tendency of your correspondent, "J. M.—s," article evidently leans towards the Welsh coal for lead and silver-ore smelting, and, at present, perhaps justly. Now, my object in troubling you is, to endeavour to awaken the attention of the coal proprietors of the north of England, to inquire into the wants of the smelters—for, indeed, that which will benefit the smelter must, of necessity, also benefit the mining interest, whether connected with ore or coal. Your correspondent, "J. M.—s," has clearly, and, indeed, scientifically, laid down the reasons "for the faith that is in him," in his clear description of the proper quality of the coal best suited for lead and silver-ore smelting; and, indeed, I must beg to refer your readers to the article itself, in conjunction with reading this.

What I wish to ask, in my present communication to you, is this—Whether, if a greater attention were given to the chemical qualities of the coal of the north of England, would not somewhere be found the very quality of coal, very desirable (according to "J. M.—s") for the silver-lead ore smelter? and, if such be found, so also will it prove valuable, I expect, to the copper-ore smelter. The coal "J. M.—s" seems to consider desirable for silver-lead ore smelting should have the qualities of the anthracite and of the pure bituminous coals combined together naturally. Now this, at first sight, seems like asking for summer and winter, for hot and cold, for vinegar and oil, in a perfect natural or chemical commixture. On examination of the question, I am much inclined to think that "J. M.—s" is right. He says, that "The art of man (he believes) has not effected such union; but that Nature, it appears, has furnished such a combination." At any rate, she has produced a coal with all the requisites before mentioned ("that is, in "J. M.—s" paper, before alluded to") as being desirable in a good smelting coal.

If Nature has furnished such a combination, can none of it be found in the north? Indeed, my only object in troubling you is with the hopes of directing the attention of coal mining captains, or other officers, to examine attentively their locality, and see whether the coal now called for cannot be found, *peradventure* abundantly, even in poor old north of England.

London, August 26.

A THINKER.

SALES OF LEAD AND TIN ORES.

Sir,—I am glad to observe, in your last week's paper, the product of a small sale of lead and tin ores. Although these sales are small in themselves, yet they are of considerable importance to appear just now. Till I saw the price of black tin, in last week's Journal, I had no knowledge of its value; nor did I know but very little about lead, or the price per ton. I have no doubt both these metals are produced of different qualities—consequently, cannot always fetch the same price; but the publication of these sales opens some of our eyes a little as to the probable price usually obtained. I observe the lead sold at 16l. 12s. per ton; and the importance of this is likely to be beneficial in some places immediately, and will show the necessity of mining adventurers looking well after their own interests. I heard of a mine, a short time ago, which produces considerable quantities of lead, and of very excellent quality; the metal has always been sold by the pursers, and they have always returned the price sold for, under 9l. per ton—or, but little more than half its value, according to the price of Barristown lead, and I do not believe the quality was any worse than that. I think this circumstance alone is quite sufficient to set all mining adventurers to work in good earnest, to ascertain on the spot all particulars relative to sales of lead and tin ores; and I say to those living in London, go down to the mine, make time somehow—the trip will be beneficial to your health, and pockets too—and examine into everything connected with your adventure. The pursers in the above case—and, also, in all others—may tell you, and truly so, that the price reported to you was the real price it was sold for, and may give you the name of the buyer, in proof of the truth of price reported; but I do not believe there is this difference in the price of that article; however, the present plan of disposing of lead and tin ore is very objectionable, and liable to strong suspicion that the adventurers are not fairly dealt with.

I could name many reasons in favour of a change in this matter, but have no desire to go into the case of any particular adventure, nor to heap opprobrium on any one, however richly it may be deserved; therefore, I suggest to all mining adventurers living a long way off from the mine (whenever they feel dissatisfied with their agents, whether as to sales of ores or other accounts, in any way whatever), to appoint a deputation of two adventurers to go to the mine, and examine into everything; also, let them take the sale of metals into their own hands, and see whether they can realise any more for it than has been done before; and, if the agent has always served them honestly, he will feel great pleasure in rendering them every assistance. I feel certain these mines can be made much more profitable than they are now to the adventurers, and not raise more metal than they do at present.

In my last, I invited captains and pursers to join in this discussion; but do not find any one notice it. My object in bringing this subject prominently before the public is, to obtain justice for the adventurers, as well as all others concerned; and, I believe, I may say I am sure, there is no man, Mr. Editor, more desirous than yourself to see mining companies prosperous—and for that reason, I ask all the assistance which you can bring to bear upon this subject, with the hopes that the discussion of it may be the dawning of brighter times to many mining adventurers; and, as regards myself, I will never cease to question every secret transaction in these sales.

London, Sept. 10.

M. P. R.

MINE SURVEYING.

Sir,—In reply to "Optimus," inquiring of me for a definition of "promiscuous" angles, I beg to observe, that the word is used in contradistinction to "certain" or "definite" angles, such as are taken with the magnetic needle. The inquirer will observe, that the angles he alludes to were taken *without the needle*, and, therefore, the "bearing" could not be known in that stage of the operation—for instance, the observer may direct his sights to the mark before him, and the vernier point may stand at 219°, or it may stand at 150°, or any other degree *ad libitum*, as the rack may turn the circle in any direction, while the sights remain pointing at the object; but this first degree being recorded, it becomes the leader of all that follow, and there will be a perfect coincidence, or uniformity, in all the drafts; and as there must be, at least, one draft clear from attraction, where the needle must act, this observation, it is evident, will determine, or give data, for finding the polarity of all the other "promiscuous" angles. I trust this explanation will satisfy the inquirer. I may here observe, that this admirable method of mine surveying is superior to all other, as it does away with all risk of imperfect angles. The system is clearly explained in the *Practical Miners' Guide*. JOHN BUDGE.

Callington, September 8.

LADDERS IN MINES.

Sir,—After paying a passing tribute to the wise and philanthropic adventurers in Tressavan, for the erection of their man machine, and to all who are willing to follow their laudable example, allow me to advert to the humble miner ladder—rendered venerable from its antiquity—and to the numerous accidents which occur from men falling away from them, in consequence of their dilapidated and often broken state, and who are taken up maimed, disabled, or dead, leaving widows and children unprovided for. Passing through a mine, the other day, I saw part of an old ladder, which had been taken up and replaced by a new; and, indeed, not before it was time—each of the deal or pine rails, or steps, being worn more than half through in two places, where the men stepped, and every here and there a rail missing, having broken off, probably, through a man's weight, and the idea of descending, perhaps, 300 fms. by such a rickety contrivance, really made me shudder. No wonder there should be such numbers of widows in the county. This ladder was not worn so to grass, where it could be seen—no, it was so worn past the dangerous point in the shaft; itself, probably over a 200 ft. pit. Cheap and safe ladders are wanted on a new principle, for shallow as well as deep mines; would not something of the following description answer the purpose well?—To a ladder of the ordinary width, the rails caused with sheet-iron, or an iron wire run through each for strength, let there be attached, at certain distances, iron bars or guards, curved to rather more than a semicircle; and to these let there be

attached about six or eight rods, so as to be 6 or 7 in. apart, perpendicularly the whole length of the ladder from the top to the bottom of the shaft, this would form a semicircular tube with steps, from which no man could possibly fall away; or, if he did, he would soon be caught by the arms or legs in the rings, or might catch hold of a vertical bar; the whole should be kept well painted or tarred. A vertical screw and car has suggested itself to me for the raising of men, which might be useful.

Penzance, Sept. 8.

A. T. J. MARTIN.

MINING IN CARDIGANSHIRE.

Sir,—In my letter of June 6, I expressed an opinion that mining, when protected by science and skill, was not the hazardous and uncertain investment that a portion of the public had considered it to be. The *Morning Post*, of Aug. 20, in giving a statement of the success of British mines, has shown that, in the aggregate, British mining, notwithstanding the moderate prices of ores of late years, and of lead ores especially, has proved to be the most profitable of public speculations. As to foreign mines, they are foreign to the subject, and I hope we shall become more estranged from them. The absurdity of forwarding treasure to be spent where its expenditure cannot be controlled, and of lending millions to a dishonest people to forestall their cotton against us, and to work their mines with reckless competition against ours, is so glaring as to extinguish all sympathy with the losers.

I do not find that the shares in the Cardiganshire mines, which are productively worked by public companies, are quoted in that statement of the *Morning Post*,—but as the productive mines so worked are known to be at this moment very prosperous, and as the adventurers therein are extending their takings in Cardiganshire, I come to the conclusion, that the keeping the knowledge of their Cardiganshire successes quiet, is their best policy. In the statement of the *Post*, the price of ores does not enter into the elements of calculation, nor is the expected change in the price of labour made the subject of remark. The expected price of lead ores, and the future price of labour, after the free importations of corn, are subjects of consideration to the British mine speculator. The borer of the miner will shortly ring as cheaply to the stroke of the hammer in Cardiganshire, as it does in the mines of the Missouri. Free trade, whilst it cheapens bread, will place an embargo on American lead. The pigs of lead, which were brought to Liverpool from New Orleans, as ballast in cotton ships, free of cost of freight, must now pay freight, or be placed by heavy miscellaneous produce—whilst the cost of conveying the lead 2000 miles to New Orleans (at a cost of 4l. 10s. per ton), will always be a sufficient protection to us. It is well known that British lead mines, generally speaking, are not extensively laid out for future production, owing to the diversion of capital to railways, and the low prices of late years.

As to silver-lead mines: the importation of Sicilian silver has ceased. Its dispersion in export and consumption is fast taking place. The expiration of the desilvering patent, in October, 1847, will cause a fairer competition for silver-lead ores amongst smelters; and we shall not then see the patentee offering 14l. 4s., as his bid at the ticketing at Holywell, when 16l. 3s. and 16l. 4s. were the prices offered for the same ore by others, who had the patent license to pay for. The spread of civilisation in America, will cause more lead to be consumed there, and it is not unlikely that lead will be imported into New York from Europe. The above are reasons for expecting that the prices of ores, and of silver-lead ores especially, will rise. Such ores as the Darren and Cwm Sebon will not fetch far short of 18l. per ton, or in before 1848.

Dismissing the mercantile part of the subject, we will return to the geological, and to Cardiganshire—a country less known to the mining capitalists of England than Mexico, owing to the barriers of a barbarous language, and a delusion amongst the Cardiganshire landholders, that they could work their own mines, when they lacked the science, capital, and enterprise. Foremost to escape from this delusion, was the Earl of Lisburne, who, placing his estates in the hands of an enlightened agent, by his advice, leased his mines to the English Lisburne Mine Company, and a receipt of 3000l. a-year royalty is the fruit of this wise policy,—the wisdom of which will be made more manifest, when the price of wheat, being under 40s., instead of 55s., shall have annihilated much surface rent. Let it be observed, that these mines, as well as all others in Cardiganshire, are worked as yet without the expenditure of one penny in fuel for steam-power. This is owing to the favourable nature of Cardiganshire ground for mining, for which a few geological reasons may not be out of place. In my letter of January 6, I stated that the killas formation of Cardiganshire was a steady one: I will endeavour to explain this. The primary stratified aqueous rocks of Cardiganshire, originally formed in a horizontal position at the bottom of a former sea (see *Vestiges of the Natural History of Creation*, page 73), are tilted up by protrusions from below. Rents, or chinks, or veins, have been formed by volcanic action, and injected with lodes of crystalline matter, mixed with ore, and more intimately mixed when silver-lead ore is the content, than when common lead ore is the mineral. The contents of the veins being in a state of fusion at the period of injection, cavities are formed by subsidence of the matter—these cavities generally at the crop of the vein are lined with crystals, formed in the cooling down of the matter, and are promising indications of a good vein below; but to argue as has been argued, that crystallization, the effect exhibited, is the cause, and that, because veins are protruded upwards to such an altitude as that their treasure should be rifled, in some cases, without sinking down, as at the old Cwm Symlog and Pen-y-Darren, the ore is, therefore, not to be sought deeply down, is only to betray an ignorance of cause and effect. The very fact, that the vein was originally injected from below, leads the scientific miner to conclude, that a steadily placed vein will increase in wealth deeply down; and, as deep mining increases in Cardiganshire, this will turn out to be the case. The fact gains daily corroboration at Cwm Sebon (or West Cwm Symlog), and other places. These uplifted strata are generally inclined upwards towards the east, at an angle of 40, and are called floors by the working miner. Their inclination is generally in one direction, towards granitic nuclei, or axes. Had there been only one protrusion upwards, the veins contained in the strata would have been once lifted up at their eastern end, then dropped out of human view, and reach for ever to westward; but the protrusions are frequent and successive, and the vein is successively lifted up to east, and inclines or falls to westward. These upliftings are shown by slidings across the vein, and vertical joints in the strata, as well as by the protrusion of the whole masses, in the shapes of successive hills—

"Immediately the mountains huge appear
Emergent, and their bare broad backs upheave."—MILTON.

Yet through these hills, in courses from north of east to south of west, or *vice versa*, the veins are lengthily located. The Cwm Sebon vein, from where the Darren vein takes its departure, and branches off from it, pursues its course through the Cwm Sebon and Cwm Symlog to Bwlch-y-Stellan—a distance of four miles, or more. The length of the traceable course of the Cwm Ystwith vein, as a geological feature, is sufficiently known. Had the formations of Cardiganshire been more chaotic—had the strata containing the injected veins been thrown end upwards, or in a scroll-like form, as is the case in more disturbed countries, we might have seen surface bunches of ore more frequently thrown up; but veins placed as I have described, are far surer, and more satisfactory objects, of enterprise to a capitalised company, who seek a large, though more distant, return. It is gratifying to find that modern associations are seeking to adventure in a county which has been so long dormant before the present century; and if what I write should have the effect of calling attention further to a field which, ages ago, was the theatre of enterprise, and profit to such illustrious persons as Sir Hugh Middleton, Sir Humphrey Mackworth, the Duke of Leeds, and others, I shall feel myself sufficiently rewarded for my trouble in writing this long letter, and much obliged by your insertion of it.

Cardiganshire, Sept. 2.

GEOLOGIST.

TOADS IN ROCKS.

Sir,—Your Journal of the 29th past mentions the discovery of a small live toad in ironstone, in Scotland. There is not a more curious, and, I will add, interesting, problem in geology, than the one to which this refers viz.: live toads entombed for ages in solid rocks. Scepticism has long contested the point, but seems now nearly subdued by the stubborn evidence of fact; and like the question of the fall of aerolites, must finally succumb to these repeated discoveries, and well attested facts. I wish we could obtain an authentic *catalogue raisonné* of the phenomena, with a correct detail of the circumstances under which these creatures have been found. This would form a very valuable element in the solution of a truly singular problem, as bearing on the age of rocks, comparative, if not absolute, in their chronology. I believe—and the fact is not a little curious—that the phenomenon has almost (if not, indeed, entirely so) exclusive reference to the *rocks*, though I have heard of other animals thus entombed from their strong dormitory, as the frog, lizard, &c.; but the statements are vague—too much so, indeed, to be implicitly relied on. All

that I have seen are fossils; I have seen several—one of these is in my own possession; I have referred to it, in conjunction with another specimen found in coal, in a former communication. Live toads have thus been found in coal, in the shale connected with coal seams, in ironstone, but more frequently in sandstone. I have heard, also, of toads having been found in fossiliferous limestone; but this information rests on insufficient grounds, to establish any data. Perhaps, it would be premature to conclude, that the phenomena are exclusively connected with rocks belonging to the carboniferous era—the probabilities, however, certainly incline in that direction.—J. MURRAY: *Portland-place, Hull, Sept. 1.*

ELECTRIC TELEGRAPHS—DR. MURRAY.

SIR,—Amongst the numerous letters from your excellent contributor, Dr. John Murray, I noticed one on the "Electric Telegraph," in which he recommends that, in order to protect the instruments, &c., from injury by lightning, the posts supporting the wires should be armed with conductors. I beg permission to state, that the wire posts on the South Devon line of railway were, at their first erection, furnished with wire conductors. Whether "every post" is so armed I am not certain; but as these works are under the direction of Mr. Brunel, who is considered to be practically a great man, doubtless every requisite precaution has been taken throughout the line.—AN ORIGINAL SUBSCRIBER: *Teignmouth, September 7.*

DUTTON'S NEW RAILWAY SIGNAL.

SIR,—My attention has been called to an *addenda* to your report of an experimental trip on the Eastern Counties Railway, to test my patent for an instantaneous communication between guards and engine drivers, wherein you state—"The invention we find is claimed by Mr. T. Goldring, of Chichester, who published a description in the *Spectator* on the 26th of September, 1845, and transmitted a copy to the Board of Trade, which was by them duly acknowledged; this appropriation is unworthy, and requires explanation from Mr. Dutton." I will not for an instant apply your remark, "appropriation," in its literal sense, as, at the time of its insertion, you had only an *ex parte* statement; and not wishing to occupy your valuable Journal, I will promptly state that, on the 24th of September, 1845, I made declaration at the Patent Office, and that prior to that date I had entered a caveat, having previously matured and submitted to the inspection of various friends a perfected model of the apparatus.—G. H. DUTTON: *Unicorn Brewery, Dutton-street, Brunswick-square, Sept. 10.*

CONSTRUCTION OF CORNISH RAILWAYS.

SIR,—It will not be surprising to me, to find that the Cornish railways will be conducted and executed by men not ourselves—probably, by some great contractor from the metropolis, bringing his host of "navies" to take away the little money that the Cornish civis may have to invest, as if we were not intellect and hands enough to do our own work. It strikes me it becomes us, professionals, shopkeepers, and craftsmen, to see into this; the money should be spent on resident persons, who would, in all probability, respond it in the county. At a time when our mines are below par—a thousand men at a stroke being adrift from one run of mines alone, demanding attention—I trust this may reasonably meet the public eye, and elicit the cry of the million. It seems to me, also, that those "navies" are morally the worst of men, by reason that none but wild and disobedient members of families prefer the wandering life to a parent's roof—witness the four recently transported. I am persuaded they generally leave the most painful evidences of their visits behind them, wherever they work in bodies.—A MOLE: *Poo, Illogan, Sept. 8.*

DIMINISHING THE VELOCITY OF THE STEAM PISTON.

SIR,—Since my remarks, having reference to diminishing the velocity of the steam piston, appeared in your paper of last week, I have been favoured by Mr. Gregory with the description alluded to, as that given in the *Mechanics Magazine*. I beg to inform Mr. Gregory, that I have not the slightest dislike to correct allusions, as to valves or other crude conceptions, I may have formed of his hydraulic intervener, as the only knowledge I possessed of the mode proposed, was that you, Sir, gave in your Number of 22d August, and from which I inferred that a species of pump or pumps was the mechanism employed. But, as things and not words—principles and not forms—are the sources from which real utility in these matters must accrue, I have, therefore, no hesitation in acknowledging that Mr. Gregory's arrangement is somewhat different from the conception I had formed, as no valves exist, save one introduced to prevent over pressure: so far the difficulty suggested in my letter is not applicable to his arrangement; but, though this difficulty be absent, on looking to the arrangement, two others occur, which I think will require some provision, if not occasion an equal or greater difficulty; the first is, that there will be a slight leakage, however well the mechanism may be constructed, to supply which I see no provision made; the other is, that in the large piston of 201 in. area, there will be considerable concussion on the reversion of the stroke. To avoid this latter evil, I think it very desirable to have the piston as small as possible, and the cylinders insured a full supply of liquid. A very small air vessel may be applied, in the arrangement I propose, to advantage. I beg, in conclusion, to assure Mr. Gregory, that my object in publishing the remarks I have on this subject, was to contribute anything I could towards rendering practical and simple a thing which then would be useful; but of the practical results I am very far from being positive, nor am I desirous of farther experimenting, as of that I have had my share, and shall, therefore, feel greater pleasure in seeing the matter accomplished by others. If the suggestions I have offered should, in any way, prove serviceable in themselves, or be the means of exciting other minds to consider the matter, they will answer the purpose for which they were made.—T. CRADDOCK: *Broad-street, Birmingham, Sept. 8.*

HYDRAULIC INTERVENER.

SIR,—Mr. T. Craddock's letter, appearing in your last, headed "Diminishing the Velocity of the Steam Piston" (*smoothly* to effect which "a desirable end," the above title represents the means referred to), calls for short notice in reply. The courteous and engineering-like manner, characterising Mr. Craddock's remarks upon the subject, acquit him, in certain allusions, as to mechanical defects or non-judicious arrangements on my part, from anything but a partial mistaken conception as to the means; and the "principle," which he admits to be "sound," in the mode I propose, will be found to contain provision for the few "practical difficulties attending such an application." The groundwork, selected for his conclusion, as to my mechanical arrangements, is the condensed notice in your paper of the 22d ult.—though clear for so short a consideration, reference should also be had to the *Mechanics Magazine*, of the 15th of Aug., wherein is a comprehensive description, illustrated by diagram, which cannot fail to explain, how the difficulties spoken of may be overcome; he will there find the movement of an unnecessary quantum of fluid, having palpable objection, at a quick speed, by friction, has been carefully avoided; also, that I employ no "pumps," or "valves," consequently can have none of the evils he comments on. A brief comparative statement of results may here, by way of self-defence, be introduced, which must read for themselves, as regards a means (whether the above, or similar ones to effect the same), reflecting on economy, to avoid the loss accruing, in the piston running away from the steam, or power, that impels it.

By the hydraulic-intervener (insuring through the nature of the medium the most perfect smoothness) may be worked a shorter-stroked cylinder than is otherwise admissible, without the attendant main evil of small throwed crank—the same having no restricted reference to the length of stroke, avoiding "centre pressure" on the shaft, and the relatively increased frequency of position, which a short stroke produces, as regards the crank, made less objectionable than otherwise, or by restricted smallness of throw attainable, having the same number of revolutions in engine-shaft, with only, by joint intervention of a bell crank working from the *versed sine*, instead of at a *tangent*, half the movement of steam—thus, by direct or ordinary attachment for an 18-in. crank, making 150 revolutions per minute, steam must travel at 900 ft. By hydraulic medium (plan 1), for same results, movement of steam need only be 225 ft.—showing a fourfold advantage, may be more, by shorter-stroked piston, if desirable. These results accomplished by such smoothness of action, have led me to propose the means for screw propelling in particular; also, suggest the applicability of the same for locomotive, pumping, and other purposes, for which designs are in hand—rendering, I trust, this repeated notice of it, no directly inconsistent intrusion on your space.

Apart from these alluded to misconceptions on the part of Mr. Craddock, I cannot but observe—perhaps, however, with an ill-grace in me to express it—with his further remarks as to the general utility of the means; or rather as to the extent of evil, which they form an aimed at remedy; and

with respect to priority of claim, it being shown our modes materially differ (though the end and principle are the same), I need hardly state, personal communications of my plans were made prior to the period referred to by Mr. Craddock; granting him, however, the same courtesy he has shown me, in expression of the wish not to detract from his right or title to invention, nor otherwise than success to pursue. A. GREGORY.

GREENHOW'S GEOMETRICAL RAILWAY SYSTEM.

SIR,—I have been much interested in the several articles which have appeared, from time to time, in the *Mining Journal*, on the Geometrical Railway System of Mr. Greenhow. That gentleman has evinced a great deal of most praiseworthy determination, by the persevering manner in which he has continued to bring the subject before the public, notwithstanding the discouraging apathy of those the world, in its ignorance, considers and believes to be eminent engineers, at the same time that he is assailed with the pitiless and bombastic fusian of those of the smaller fry of the clique. I have read the pamphlet published by Mr. G.; also, the letters *pro* and *con*, which have appeared in the *Mining Journal*,—and I must give my testimony most decidedly in favour of Mr. Greenhow's, who, I consider, has fairly proved his case, fully to the satisfaction of any one who really understands a mathematical figure. I am glad to see that, in your paper of Saturday last, he has gone more fully into the advantages of the inclined spokes, without which (as he has satisfied me from the commencement) the concave tire would not run for one mile on the round rail—because, with a perpendicular spoke, any diagonal impulse would cause the wheel to take a partial turn on the rails, so communicating the resistance both to the gravity and the momentum, to a point on the tire, without or beyond that point resting on the vertex of the rails, from whence it would be communicated to that part of the tire still within the said vertical point, on which would depend the entire power of resistance to the displacement of the wheel from the rails. It is not necessary for me to point out to a "Practical Mechanic," or to any one willing to consider the subject in a mathematical point of view, how slight the effectual resistance of this small segment of the tire would be to an impulse applied in a direct line with the cotangent of the arc, terminated by the inclination of the spoke. All this Mr. Greenhow has provided for by a more simple, yet truly mathematical arrangement: he places the spoke in such a manner, that up to a certain point of elevation the pressure must be communicated in a direct line with the spokes through the tire to the centre of the rails, removing the real point of resistance from the vertex of the rail to the extremity of the arc, terminated by the line described above; at once constructing the rail itself into an abutment, offering an effectual resistance to any tendency to lateral displacement—it being absolutely necessary before that could take place, for the whole of the superincumbent weight to rise a distance equal to the complement of the arc, terminated by the spoke; the real value of which resistance may be expressed thus:—as the sine of the arc is to radius so is the resistance to the amount of gravity. This is different from the manner in which Mr. Greenhow expressed it, but will be found to give the same result;—I prefer the above as being more simple. One gentleman, a M. Burnier, makes a great fuss about, what he calls, "an established law in mechanics." I am sorry to be obliged to say, that many of those "established laws" are contrary to all mathematical demonstration, and most certainly at variance with the laws of Nature. How do they become "established?" By the experiments of men seeking for the truth, and attempting to ascertain the beautiful and simple laws of Nature? No; but by superficial theorists, striving to support a preconceived idea, and, in order to do so, torturing their brains (pardon me, I ought to have said skulls), in order to devise experiments which will support the views of sordid interest or bigoted ignorance; and then, forsooth! the affair is sent to the world as an "established law." I need only point out, in support of the above, the many foolish attempts lately made at atmospheric modes of propulsion, in which thousands have been wasted at the instigation of either knaves or fools.

But to return to Mr. Greenhow. The experiments he describes, made by him on the relative amount of friction between the present perfect mode of railway construction, and that proposed by him, appear to me to be not only quite conclusive, but also to be in perfect accordance with pure mathematical demonstrations. As he shows, in his letter of Saturday last, with the concave tire on the convex rails, the weight borne by each degree in the quadrant, from the line at 90° on the vertex of the rail to the origin of the arc, diminishes in the ratio; as this tangent of the arc is to the cotangent, so is the pressure at each degree to the weight of the mass resting on the concave tire. I have put it more at length than Mr. G. did, not because I did not think him to be clear enough, but to show I was prepared to prove my case before I took up the cudgels in behalf of a stranger. The above quite accounts for friction on the round rail being absolutely so much less than it is on the flat one. But it is by the inclined spoke that Mr. Greenhow is enabled to take full advantage of this law, "if I may use the expression." When the spoke is thrown beyond the perpendicular, the pressure being communicated, as I described above, in the line of the cotangent, places the resistance at the extreme point of the tire, or origin of the arc, instead of on the vertex—so creating an immense increase of friction, whilst the inclined spoke places the resistance in a line with the secant of the arc, terminated by the spoke, and from that point the diminution of the pressure takes place as before demonstrated. I might point out other advantages of this inclined spoke, but I have already occupied too much of your valuable space.—Q. E. D.: *Southampton, Sept. 7.*

ATMOSPHERIC RAILWAYS—THE "LEGITIMATE SYSTEM."

"As it must be in any scientific discussion—truth is our object—our only object—our support—any other must be laid aside." "Any lover of truth will accept it from wherever it comes."—N. A. BURNIER: *Mining Journal, July 18.*

SIR,—Encouraged by this liberal sentiment of Mr. Burnier, I ventured, in my letter of the 29th of July, to question the correctness of some answers to questions relative to the loss of power in working atmospheric railways on what has been termed the "legitimate system," which had previously been put by that gentleman to himself, and published in the *Mining Journal* of July the 25th, professedly for the benefit of "An Engineer." Now, Sir, who, after reading the letter containing the above extracts, would have believed that its author could have been capable of exhibiting towards any one, whether an engineer, or a humble mechanic—and whether educated or uneducated—such an ill-feeling as that manifested throughout every paragraph of his last communication. How my observations could have been construed into "rough personalities," I am at a loss to conceive; nor do I think that the acquisition of a knowledge in the "elementary rules of calculation" would help me out of the difficulty; or I would have no objection to make an effort for its attainment; but if my remarks were really taken as if intended for "rough personalities," I beg seriously to say that they were not intended for such, and that such a thought was as far from my mind as the atmospheric system, is from perfection; and, as I will endeavour to be more cautious in future, I shall hope that the "well-bred champions" will still continue to let their less fortunate brethren have the benefit of their scientific acquirements, and also of their candid and courteous behaviour—example will do much to improve us, and it should never be forgotten that "one touch of Nature makes all the world kin." But to the question, which in plain English appears to be this—is the loss that would be sustained in working an atmospheric railway at 15 in. of mercury, by letting the air from the tube into vacuum reservoirs, at 20 in. of mercury, as Mr. Burnier states—or is it less or more than that?—I say it is less, and shall again attempt to prove it. Although it may be somewhat customary for gentlemen in writing up their own systems, and in writing down those of others, to swell equally the advantages of the one and the disadvantages of the other; and, although the practice is common, it must, nevertheless, appear to minds untroubled by the fetters of custom to be an exceedingly dishonourable one; truth needs no such base support, for "whoever knew her put to the worst in a free and open encounter?" if this be borne in mind, we shall not become angry when reminded of the point for which we started, and at which we are endeavouring to arrive; if, then, there is truth in Mr. Burnier's answers to his queries, he has nothing to fear—but if, on the contrary, there is no truth in them, the sooner that is shown to be the case the better for him and those he would enlighten. Two things were complained of in my notice—first, the neglect of Mr. Burnier himself in attending to the wholesome advice gratuitously proffered to others; second, the incorrectness of his conclusions. To the first complaint a very unsatisfactory answer is given: "if it was unnecessary to fill the columns of the *Mining Journal* with algebraic figures," it does not follow that, therefore, it was unnecessary to furnish any clue whatever, whereby we might arrive at similar conclusions, especially after the advice given to M. X.; and I question whether, if the truth could be ascertained, the whole of your readers did not demur to this pit-hand way of settling a dispute. To the second objection, it is alleged that my "intrusion has produced no result for the question itself," that my

"arguments to prove what I advanced, ought to be strictly, perfectly, right;" that I have only "solved about the tenth part of a problem;" and that if I had worked it out to the end, I should have "obtained within a few hundredths of the same results as Mr. Burnier gave," &c.

When Mr. Burnier put and answered the question under consideration, he did not say, previous to giving the answer—nor, indeed, did he say at all—that all the reservoirs were to be left after the operation at 15 in. His own words are these—"We suppose that 'M. X.' exhausts continually his reservoirs to 20 in., and that he works his railway at 15. Taking the capacity of the propelling tube to be equal in size to each reservoir, what will be the number of reservoirs necessary to exhaust it—that is, to raise it to 15 in.?"—*Ans. 3.* In Mr. B.'s last letter, he says—"In the case proposed, various volumes could be employed; but as the pressure increases, when the volume is lessened, and reciprocally, any change in these quantities produces the same amount, or very nearly." Now, here is the mistake; it does not require any very extraordinary powers of discernment to enable one to discover that a much greater loss will be sustained in working atmospheric railways at a low pressure, with magazines at a high pressure, than if they were worked with magazines of such degree of rarefaction as would enable them to perform their work. Why should it be proposed to use three reservoirs at 20 in. for the preliminary exhaustion, when two is sufficient, as has been previously shown? and Mr. B. has himself shown that, at the end of the operation only does the power and resistance "equilibrate;" and yet contends that the loss is the same, whether the first reservoir is allowed to continue to work until its power equilibrates with the resistance, or whether another of greater power is put to work to perform what it could have done; but, as I prefer to use only two, shall calculate the loss accordingly. For the second part of the operation, Mr. Burnier allows three reservoirs at 20 in., each of the same capacity as the tube; and has not the generosity to let this system have the benefit of one single pound of power over and above what it could retain till the end of the operation, although it has been shown that an average of 17½ in. would be obtained. This is manifestly unfair. It is said, "that the surplus power in the beginning of traction cannot be made useful for the end of the operation; but does not Mr. B. know that, if the power is at first greater than needed, the result will be an increase in the speed of the train, which increase of speed can be made useful, even at the end of the operation; for the calculation is made of the amount of power necessary to carry a train a certain distance within a certain time, and there are but few cases in which it would not be desirable to reduce the speed of the trains on approaching a station; and the power spent in putting a train in rapid motion is not all exhausted the moment that power is cut off—it would be well in some respects if it was; but it continues to influence the motion of the train for a considerable time. I, therefore, consider it but fair towards this system, to allow the average tractive power from beginning to the end of the operation; and now for the other nine-tenths of the problem, which, for the present, I must be permitted to solve "in my own way." These 9ths will consist in answering the following questions, and comparing the answers with the useful effect produced—viz.: "What amount of power is necessary to raise four reservoirs, from 15 to 20 inches, and one from 10 to 20 inches?" It is stated, that the space to be opened for those at 15 in., is 4ths of their capacity. To this I have not the least objection, it is rather under than over the mark; for, if the reservoir was a large cylinder, with a piston fitted to it, and the requisite quantity of air taken out at one stroke in the lowest state of rarefaction, the space to be opened would be one-third of its capacity; the space to be opened to raise the one at 10 in. up to 20 in., will be about 4ths of its capacity. If the requisite quantity, in its lowest state of rarefaction, could be taken from this reservoir at one stroke, the space to be opened would be one-half of its capacity—altogether, the space to be opened is equal to 24th the capacity of the tube. The next thing to be considered is the power per square inch necessary to withdraw the air from the reservoir—it is said that this is at least 9½ lbs. This is a serious mistake; for the average power at the commencement would only be 5½ lbs., and at the end of the operation only 5½ lbs.—that is, for four reservoirs. For the other one, the average power at the commencement would be 4½ lbs., and at the end of the operation the same as the others—viz.: 5½ lbs. It must be understood, that this is merely the resistance of the atmosphere, without anything being allowed for the friction of the piston, &c.—say, in round numbers 6 lbs., and we have 6 × 24 = 144, as the power expended; and, as it has been shown, the average tractive power was nearly 17½ in., I must allow, at least, once the capacity of the tube at 8½ lbs., as the useful effect produced. By comparing these quantities, the following proportion will be obtained—viz.: 132:85::100:64—showing a loss of 35.6 per cent.: a little more than half Mr. Burnier makes it; and, as regards the average pressure per inch, in extracting the air from the reservoirs, I will undertake, should any demur be made, to demonstrate that it is not more than I have stated. I will not undertake to show that the space to be opened by the pumps is not more than Mr. Burnier allows for it, but it is not much more. The air in its lowest state of rarefaction would, if six reservoirs were used, as Mr. Burnier proposes, occupy a space equal to twice the capacity of the tube—in its highest state of rarefaction the space it would occupy would be three times the space of the tube; if we take an average of these spaces, we shall have 2½ times the capacity of the tube as the space to be opened; Mr. Burnier makes it 2½ths; it must be understood that more than half the air will be taken out before half the space has been opened—viz., to 17½ in.: so that this part of his calculation might, for anything I know, be perfectly right, if no leakage takes place; but, as leakage will take place "under the best of circumstances," it is but just towards Mr. Burnier to admit that this part of his calculation is below the truth; but in admitting this, it must not be understood that I admit that, upon the whole, his calculation is nearly right, it is at least 25 per cent. too high. Notwithstanding what has been said about subjecting of calculations to certain tests, I shall have the presumption to believe that, on reconsidering the question, Mr. Burnier will discover his error without "a very minute investigation, according to the rules of *matheumatics* (mathematics)—for that percentage is not everybody, there is his cousin *new matheumatics* (pneumatics) and several others, whom a slight knowledge of would be no impediment in the way of solving a complicated problem. It may be somewhat humiliating to confess an error, but "none but the humble are great"—justice to myself demanded, and especially after what had been said, that the error should be made manifest. Some allusion has been made to my having omitted, in my calculation on the losses of pumping from air magazines (not of air-pumps), a loss of 50 per cent. by the employment of single-acting air-pumps, which I do not understand, and, therefore, cannot make any reply to. Allusion is also made to my "presenting projects for working railways and everything, the basis of which is the employment of air-pumps;" and "that I may have forgotten that losses exist as well in compressing as in exhausting air-pumps," &c. In reply to this, I have only to say that in the system which I have hinted at, although air-pumps will, doubtless, be used, they will not constitute the basis of the system, compressed air (or rarefied air if it be preferred) will be obtained in superabundance, without the use of air-pumps, and, after the provision is made, without any expense whatever. Mr. Burnier must have a little patience with me, and I will in due time explain the whole system; and if he still considers that my manners are "rough," I can assure him that my meaning is good, and shall hope that the one will compensate for the other.—J. WESTON: *Aug. 25.*

Errata.—In the 14th and 16th lines from the bottom of my last letter, for the word "square," read square root.

ON THE ADULTERATION OF FLOUR.

SIR,—For the information of your correspondent, who signs himself "A Mechanic," in your paper of the 22d August, I have no doubt but that the adulteration of flour of which he complained was effected by sulphuric lime. A similar case occurred in this neighbourhood in the year 1842, some unprincipled millers having ground up with the flour some of the worn out moulds, made of plaster of Paris (*alias* sulphate of lime), which are used in the Staffordshire potteries for forming various articles of earthenware and china. A great number of individuals suffered most severely from the effect of the vile compound, and indirectly the lives of several were shortened. One of the rescues, the miscreant who had caused the greatest mischief, was taken before the magistrate, and fined 20l.—transportation would not have been too severe a punishment for him. The tests which were used for the magisterial investigation were of the most scientific description; a gentleman (I think of the name of Davis) from the Manchester Mechanics Institute, conducted the experiments, and proved the adulteration most fully, as well as satisfactorily, to the magistrates and a crowded court. The plan, however, which was adopted by individuals who suspected the flour they had in their possession, was simply to burn a small quantity in an iron ladle, or any other convenient article, which would stand a red heat in a kitchen fire; and the result was, that in every case where the plaster moulds had been used, it was found at the bottom, in the form of an incombustible white powder, and, of course, by weighing the flour in the first place, and the residue after, a tolerably correct result

was obtained. I have no doubt but that, in some districts, at the present time, the same iniquitous conduct is pursued, and that a large portion of the moulds, which are eagerly bought up by hawkers of crockeryware, and sent by cart loads into Lancashire and other districts, ostensibly for the purpose of cleaning door-steps, find their way into articles intended for food for man; and it would be a great boon to society were the laws relative to the adulteration of food revised, and made more penal—for surely in the present age, it is a most strange anomaly that, whereas the poisoning of a horse should be punishable with transportation, the slow poisoning, and the undermining of the human constitution by deleterious articles of provision, should be only visited by a fine. I trust, Mr. Editor, that you will excuse my having trespassed so far upon your columns, and that the remarks I have made may be of some little service, by directing public attention to the subject. A SUFFERER FROM ADULTERATED FLOUR.
Newcastle-under-Lyme, Aug. 28.

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

TUESDAY.....Dorchester Mining Company—on the mine.
Durham County Coal Company—office, at One.
WEDNESDAY.....West Wheel Jewell Mining Association—office, at One.
THURSDAY.....Tincroft Mining Company—office, at Three.
Grand Surrey Canal Company—office, at One for Two.
FRIDAY.....Thames Haven Dock and Railway Company—office, at One.
[The meetings of Mining Companies are inserted among the Mining Intelligence.]

MONMOUTHSHIRE RAILWAY COMPANY.

The first annual general meeting of the shareholders in this company was held at the offices, 2, Moorgate-street, on Thursday last, the 10th instant. The Hon. E. FRITZMAURICE in the chair.
The Secretary having read the advertisement convening the meeting, Mr. CHAPMAN, a director, read the report, which congratulated the shareholders on having obtained their Act of Parliament, at comparatively so small an outlay. The objects of the company were the purchase of the Monmouth Canal of 22 miles in length, and 59 miles of tramroad connected therewith, and all the mining properties in the district, with 20,000l. interest in Newport Dock, and the construction of about 60 miles of railroad. The holders of canal shares had the option of exchanging into the railway, in the proportion of eight railway shares for one canal share; and this had been availed of to a very considerable extent. It concluded by expressing the confidence of the directors in the ultimate entire success of the undertaking.

The CHAIRMAN observed, that he could only repeat what he had before expressed—his great confidence in this railway; and he had ample reasons for such confidence: during the past year, the canal traffic had increased 10,000l. over the previous year; and this, he should remark, was without taking a single passenger into account, but solely for minerals; and what they might expect when the line was complete, might be inferred from the fact, that the Taff Vale, a mineral district like theirs, had increased 10,000l. a year in passengers alone, with half the population, as compared with the Monmouthshire line. Another great chance of success that presented itself was, that at "present" the commercial activity of the district was confined to the sea,—but, on the completion of the line, they would immediately be put in connection with Liverpool, Birkenhead, Chester, and all the large towns, and with the northern and midland districts, and with the metropolis. With respect to any connection with any of the large lines, he would assure the proprietors, that the directors had most seriously considered the subject, and any opportunity which might arise to advance the interests of the company, they might rest satisfied, would be taken advantage of.

Resolutions were then passed, adopting the report—appointing Messrs. Snow and Allen auditors, at salaries of 10l. per annum each—and the nine gentlemen of the managing committee directors, at a remuneration of 600l. per annum, exclusive of travelling expenses.

Mr. CHAPMAN read the financial statement, from which it appeared, that the total amount received was 25,000l.: the preliminary expenses about 13,000l.; general expenses since, 3484l. 5s. 9d.; and the liabilities still outstanding about 10,000l. He remarked on the vast capabilities of the district through which the railway would run, the increasing importance of the port of Newport, the peculiarly advantageous position of the company in not having to seek an income for their capital, 5 per cent. being guaranteed to them in the purchase of the canal, and on the great traffic and general success which must accrue, in developing the resources of the county—there being, besides its minerals, scarcely an agricultural product that Monmouthshire does not produce.

A vote of thanks was then passed to the chairman and directors, and the meeting separated.

ARMAGH COLERAINE AND PORTRUSH RAILWAY.

The few dissentient shareholders who have opposed the endeavours of the directors to prevent expenses, by amalgamating with another company, and by adopting a line of country chosen from both surveys, and which must, if carried out, prove highly advantageous, had another show off on Tuesday last, and passed a series of resolutions, indicative of their determination to proceed to law for the recovery of their deposits; the principal portion of those present were the same parties who made such a noisy and indecorous interference at the meeting called by the directors at the London Tavern, on the 27th ult., when, from a scrutiny of the scrip, there was a majority of 6974 shares in favour of the amalgamation. To several of this minority we know the return of 1l. per share would be indeed welcome, if indeed they hold any shares at all, and are not put forward by others to swell the number; but the furtherance of a national work is not to be retarded, because a few individuals have gone beyond their means; and had the high price of shares continued, there would not have been a word heard against the legality of the amalgamation. We are sorry to see this opposing clique, supported by two or three gentlemen of wealth and standing, in opposition to the great and respectable portion of the scrip-holders.

BRISTOL AND EXETER RAILWAY COMPANY.

The twentieth half-yearly general meeting of the shareholders in this company was held at the White Lion Hotel, Bristol, on Thursday week, the 3d inst. JAMES GIBBS, Esq. (chairman of the board), in the chair.

The attendance of shareholders was very numerous, and among the directors present were Messrs. Edward Divett, M.P., Lucas, C. Shapland, C.B. Tripp, J. Brown, H. Mills, &c.—After the usual preliminary business had been gone through, Mr. BADHAM (the secretary) read the following report:—"The amount of rent and share of toll stated by the Great Western Railway Company to be due to this company for the half-year ending on the 13th day of June last, is as follows:—Fixed rent of the line from Bristol to Exeter, from the 14th December, 1845, to the 13th of June, 1846, at 71,957l. a year, 35,978l.; share of toll on 259,714 passengers, conveyed 8,201,170 miles, at 4d. per mile, 85,422l.; ditto on merchandise, 51,143 tons, conveyed 2,152,212 miles, at 4d. per mile, 22,411l. = 46,793l. This being the least productive half of the year, your income from the line is about 1700l. less than in the last; but it is 1800l. more than in the corresponding half of 1845. By the revenue account you will see that there is a clear disposable balance of 23,196l. 17s. 10d., which will enable you to declare a dividend of 1l. 10s. per 100l. share, free of income tax, payable as usual after the end of October. Your directors propose to alter the periods when the half-years for the dividends expire, from the 6th of April and the 6th of October, to the 30th of June and the 31st of December—so that the present dividend, although payable on shares that may stand registered, as heretofore, on the 6th of October next, will be for the half-year ending on the 30th of June last, and the next dividend will be for the half-year ending on the 31st of December. In future, therefore, if you approve of this arrangement, all 100l. shares standing registered at the closing of the transfer-books before the respective half-yearly meetings, will be entitled to the dividends for the half-years to the preceding 30th of June and 31st of December. Nearly all the land required for the Clevedon and Tiverton branches has been purchased, and the works are progressing satisfactorily. Part of the land for the Yeovil branch has likewise been secured. By the statement of receipts and expenditure it will be seen, that the balance in the hands of the bankers, on the 30th of June, was 40,268l. 11s. 6d."

After a few observations from the Chairman and Mr. Vatcher, Mr. RAWSON expressed his fears, that the association of the Bristol and Exeter with the Great Western Company could not long exist upon the terms by which they were now regulated. He had paid the deepest attention to the subject for a considerable time; and he had long been convinced, that either the Bristol and Exeter Company should, for the future, become entirely an independent company,—or, if it must remain associated with the Great Western Company, such connection must be carried on on equally beneficial terms. It was, of course, well to be on good terms with any neighbouring company; but, if he understood the word *friendship*, it was this—to encourage and assist all who did not interfere with, or encroach upon, what they believed to be their property, rights, and privileges. If the Great Western Company took from them the London traffic, and diverted it into another channel, what excuse, he would ask, could the directors make to the shareholders? When they had lost a traffic worth from 1½ to 2 per cent. dividend, it would be a poor apology for them, and a still poorer consolation for the shareholders, to say—"the Great Western Company very much respected them," his opinion, and which coincided with that of others, was, that something like a marriage between the two companies was contemplated by the Great Western Company. Things could not go on as they were without discredit to one party or the other. If they had made a mistake, by making the line to Exeter through Bristol, and were going to form another from London to Exeter, they ought to make the most direct and best they could; but such would not be the case. They had got the Wilts and Somerset line, to make which available would take them six or seven miles round about, much in form of the letter Z. Some change must take place in the management between the two companies.

Some desultory conversation ensued, when Mr. VATCHER hoped the directors would narrowly watch the interests of the company, and not permit the Great Western Company, or any other party, to interfere with them in what they considered their just due.—Power was then given to make the necessary surveys, and take all necessary steps for coming before Parliament next session; and after a vote of thanks to the chairman had been passed, the meeting separated.—The resolutions agreed to will be found in our advertising columns.

DENDRE VALLEY RAILWAY COMPANY.—A special meeting of shareholders in this company was held at the Railway Protection Society's offices, 11, Bucklersbury, on Thursday last, the 10th instant.—Capt. PILKINGTON in the chair. It appeared that, for a considerable time, efforts have been making to obtain a statement of the receipts and disbursements of the funds from the directors, without success, although there appears not the most remote possibility of carrying out the line. A number of letters were read from shareholders, making the number now opposed to the directors 43, representing 6000 shares. Not a spade has yet been put in the ground; and although the concession has been obtained, it cannot be commenced with the present state of funds; and without a plain statement of accounts, the directors can never realise another call.—Under these circumstances, it was arranged that the meeting should adjourn, and the whole of the gentlemen present (10 in number) should proceed from thence to the Dendre Valley Railway offices, in Old Jewry Chambers, as a deputation to the directors, and meet again to discuss the results.

ROYAL CORNWALL POLYTECHNIC SOCIETY.

The fourteenth annual exhibition was held at the Polytechnic Hall, Falmouth, on Wednesday, the 2d Sept. Among the company present were Sir Charles Lemon (president of the society), the Earl of Ilchester, Mr. B. Taylor, Mr. R. W. Fox, Mr. R. B. Fox, Mr. J. S. Enys, Mr. Snow Harris, Mr. J. Hearder, General Wood, Rev. J. Punnett, Mr. Oxland, &c., with many other members of the principal families in the county, artists, engineers, mechanics, and lovers of the arts and sciences. The exhibition was considered to be decidedly better than that of last year.

The mechanical department was well supplied with various ingenious models of machinery. Among them were—an oscillating engine; a model of Clarke and Varley's atmospheric railway; a medico-galvanic apparatus, with graduated regulator for modifying the shock, exhibited by Mr. Hearder, of Plymouth; an improved barometer; portable miner's dial; improved quadrant; fire-guard; a digger and pulveriser; a machine for measuring the velocity of the piston of an engine, and another for measuring the space through which it passes in the cylinder; plan for an improved three-wheel carriage; plan of shipbuilding with iron framing and wood planking; steam-engine, made by a working miner without a turning lathe; other models of steam-engines by working men; machine for covering wire with cotton or silk, &c.

The following are notices of some of the models, &c.:

IMPROVED OSCILLATING STEAM-ENGINE.—The improvement which this engine exhibits over the common oscillating engine, is the introduction of a circular valve, or cock, instead of the ordinary slide valve, thereby dispensing with the eccentric guides, &c., which renders the engine much less complicated and more easily managed, as one lever is all that is required to raise, stop, or reverse the engine. In oscillating engines with slide valves, it is necessary to have a large weight on the opposite side of the cylinder, in order to balance the nozzle, which is in some engines several hundreds weight of iron. By using the valve, or cock, as here introduced, the slide, nozzle, weights, &c., are all dispensed with, which will prove a great advantage, particularly in small river boats, or where light machinery is required. The model was exhibited by Mr. J. B. Bone, of Budock.

MACHINE FOR MEASURING THE VELOCITY OF THE PISTON OF AN ENGINE AT DIFFERENT PARTS OF ITS STROKE.—This machine was exhibited last year by Mr. James Bache, of Penryn-Parva. It was not then perfect, but has since been improved, and the premium of 10l. offered by the society has now been awarded to its inventor.

MACHINE FOR MEASURING THE SPACE PASSED THROUGH BY THE PISTON.—This machine was first exhibited by Mr. T. Daniel, of Penzance. It is so constructed that the dial makes one revolution for each full stroke of the piston, and for every portion of the stroke, when this portion amounts to one full stroke. It otherwise resembles a common counter in construction, except that the number given tells the number of full strokes made during any period of time in which the trial is made, and which may extend to several months.

NEW FORM OF ATMOSPHERIC RAILWAY.—A model was exhibited of this railway, made and invented by Mr. Thomas Harris, son of Mr. Snow Harris. The object of this contrivance was stated to be, to obtain a more perfect command over the movement of the piston, and lessen the number of exhausting engines requisite for performing a certain distance, say 100 miles. It was proposed to lay down, first, an air-tight tube the whole length of the line, and employ a given number of engines to keep this tube exhausted by working them at each extremity. The railway and motive pipe are placed over this tube in divided stages of a given number of miles, and valvular communications or cocks made to open into the pipe below so as to be used at pleasure. There is a double piston in the motive pipe—so that, by means of the valves or cocks being opened at either end, the carriage may be made to move in either direction, and to a very great degree of precision, and can be stopped at ease at the different stations. It is evident, the inventor states, that by this means the distance can be accomplished by at least one-half the exhausting engine apparatus which would be required in the case of employing an engine or two at each stage, since a single engine at each extremity may, by the valves or cocks, be brought to act, by means of the exhausted tube beneath, upon any one stage.

IMPROVED MINE QUADRANT.—This instrument was exhibited by Mr. Wilton, of St. Day, who remarked that the practical miner had always been subject to considerable inconvenience in using any of the common quadrants attached to the miner's dial for finding the angle of elevation or depression, so often necessary in underground operations. To use the instrument exhibited, it was only necessary to stretch the measuring chain through the shaft, winze, sink, or other part of the mine to be surveyed, and then to hang on the quadrant to a link of the chain, when the plumb-line will cut the respective divisions in each series required. If any doubt exists of the correctness of the quadrations, the instrument may be inverted on the chain, and then the plumb-line will cut the divisions on the opposite side of the limb, and a mean between the two results will give the truth. The instrument is then made to snap to a link of the chain, by the simple contrivance of a spring, &c. The inventor observed, that this instrument was not offered as a substitute for the more elaborate quadrant in surveying situations easily accessible, but was presented to the practical miner because it supplied a desideratum which all other instruments want.

IMPROVED BAROMETER.—In this instrument it is proposed to dispense altogether with the Torricellian vacuum, indispensable to the ordinary barometer; and instead of using a column of mercury 30 in. in length, to show an extent of variation which never exceeds 3 in., to employ a column the length of which barely exceeds in extent the range of variation which it has to indicate. The error induced by the outer bulb acting as an air thermometer is proposed to be corrected by the expansion of mercury acting in an opposite direction. The advantages of the instrument would be its cheapness and portability. The model was exhibited by Mr. John Way, of Burncoose.

IMPROVED GALVANIC COIL MACHINE.—Mr. J. N. Hearder exhibited and explained an improved galvanic coil machine, with graduated regulator for medical purposes. By this machine the intensity of the shock might be regulated with great delicacy, which was an object of much importance when galvanism was used as a therapeutic agent. The machine had been found to answer its purpose in one of the metropolitan hospitals, and it was a complete *multum in parvo*. This machine was so simplified as to place it not only within the practice of the medical profession, but private individuals might also use it for their own benefit.

[To be continued in next week's Mining Journal.]

RAILWAY TRAFFIC.—From our official returns, it appears that the amount of traffic for the last week, on nearly 1800 miles of railway, was 171,332l., thus accounted for:—93,283l. for the conveyance of passengers only, 34,148l. for the carriage of goods, and a remainder of 43,901l. for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 18,689l.—*Railway Chronicle*, of this day.

TRIAL OF THE ATMOSPHERIC.—It is stated that the engine-house at Exeter and Countess Weir, are now nearly finished, as to enable a trial of the atmospheric principle to be made on the first three miles of the line in about a week or a fortnight. All the engine-houses, it appears, are constructed on models different from each other.—*West of England Conservative*.

DOMESTIC BREWING—the PATENT CONCENTRATED MALT AND HOP EXTRACT, enables PRIVATE INDIVIDUALS TO MAKE FINE HOME-BREWED ALE,

WITHOUT EMPLOYING ANY BREWING UTENSILS.—It has only to be dissolved in hot-water and fermented.—Sold, in jars, at 1s. and 1s. 6d.; and in bottles, for 9 and 18 gallons ale, at 6s. 6d. and 12s. 6d. each, by the

BRITISH NATIONAL MALT EXTRACT COMPANY,
7, NICHOLAS-LANE, LOMBARD-STREET; Petty, Wood, and Co., 53, Threadneedle-street; Wix and Sons, 22, Leadenhall-street; Batty and Co., 15, Finsbury-pavement; De Castro and Peach, 63, Piccadilly; Hockin and Co., 38, Duke-street, Manchester-square; and all respectable oilmen and grocers.—Also, may be had, gratis,

I. REMARKS ON IMPROVEMENTS IN BREWING, by using the Patent Malt and Hop Extract, enabling families to brew without brewing utensils.
II. INSTRUCTIONS FOR BREWING from the Patent Malt and Hop Extract.

III. OPINIONS RELATIVE TO THE MEDICINAL PROPERTIES OF MALT AND HOPS.
London: DICKS & CO., 7, Nicholas-lane, Lombard-street.

PRELIMINARY ANNOUNCEMENT.

WHEEL CURTIS COPPER MINING COMPANY, in the PARISH OF CROWAN, NEAR CAMBORNE, CORNWALL.
In 6000 shares, of £4 each.—Deposit £1 10s. per share.

OFFICES—GREENHALL ROOMS, BASINGHILL-STREET.
In the present age of busy speculation, it may be deemed presumptuous to present another scheme to the attention of the public—a vast portion of which have been severe sufferers by the railway mania, and its consequent panic of 1845. The proprietors of the above mine have anxiously waited a favourable moment for their present announcement—content to let the gambling fever for joint-stock impossibilities subside, and a healthy condition of the money market succeed, before submitting a property, of the value of which they are assured, to the open stage of public opinion.

As one-half of the shares in this mine are held by the owners of the property, it is intended to allot 3000 shares among the best applicants, from which number a board of directors will be selected; to whom the full power of working the mine and allotting the shares, &c., will be committed. The directors shall be satisfactorily secured by the present proprietary from all unreasonable risk.

Parties of respectability will be furnished with full particulars, by application personally, or by letter (post-paid), to the offices, as above, where specimens of the ore may be seen, between the hours of Eleven and Four o'clock daily.

On behalf of the proprietors,
GEORGE PILKINGTON, Manager pro tem.

BANWEN IRON COMPANY, GLAMORGANSHIRE.

Capital £100,000, in 10,000 shares, of £10 each.—Deposit £3 per share.
Paya 1s on complete registration; with two calls of £2 each, beyond which no further calls will be made.

(Registered Provisionally, pursuant to the 7th and 8th Vic. cap. 116.)

Directors.
SAMUEL BOYD BARNETT, Esq., 17, Dorset-place, Dorset-square
SAMUEL KENTISH, LL.D., Llangar, Carmarthenshire
CLAUDE ARMSTRONG, Esq., Pencoted-hill, Kidwelly
ALGERNON H. SWIFT, Esq., Crosby-hall Chambers, Bishopsgate-street, Iron merchant
FREDERICK FOWLER, Esq., Windsor
CHARLES FREDERICK PHILIPS, Esq., Adam-street, Strand
ROWLAND JAY BROWNE, Esq., Ynysarwed, Glamorganshire, and the Inner Temple, London.—(With power to add to their number.)

Messrs. Spooner, Attwood, and Co., Gracechurch-street.

Solicitor.
William Martin Wilkinson, Esq., 44, Lincoln's Inn-fields.

Secretary.—Sydney Pottinger Harris, Esq.

The object of this company is to work the ironstone and anthracite coal of the best quality lying under 537 acres, (nearly one square mile) situate near to the Banwen mountains, 13 miles from Neath, and 16½ from Swansea, Glamorganshire, and in the immediate vicinity of the well-known Ynyscedwyn, Onllwyn, and other highly prosperous iron-works. The minerals, which have been surveyed by very eminent surveyors, and are proved by working in the adjoining properties to consist of four veins of coal, respectively of 4, 12, 5, and 3 feet in thickness, and veins of iron mine, amounting together to 8 feet in thickness, both the coal and iron mine crop out of the surface of the land; the coal will, therefore, be worked by level, and the mine by patching, without pits or machinery of any sort. There are cheap limestone quarries in the neighbourhood, from which the other works obtain their flux, and building stone and fire-clay are found on the property. The estate is most favourably situated for transit, as by laying down rather less than a mile and a half of tramway (at an expense of £1200), the works will be placed in communication with the Swansea Canal, and the South Wales, Swansea Vale, and Vale of Neath Railways, and with the ports of Swansea, Neath, and Britton Ferry; there will, therefore, be the most ample means of transit to all parts.

It is proposed to erect six smelting furnaces, each 34 feet high, which will turn out at a low average of 14,000 tons of pig iron per annum, the cost of these (which may be completed within six months), with the necessary offices, including the expense of opening out the mine, the shares allotted to the lessee for his interest under the lease, and a sufficient sum in hand as working capital, will not exceed £61 a share, beyond which no calls will be made. From the coal and ore cropping out on the surface, the economy of patching and level working, and the facilities of procuring limestone, iron may be made (including wages and tear of the plant and works, and the expense of management) for 2l. 10s. per ton, (see the prospectus and estimates); and reckoning a sale of the iron at 4l. per ton merely, (it is now worth upwards of 5l. per ton), the return would be above 35 per cent.; and as at the worst time anthracite pig has not sold at less than 3l., which would leave a net profit of 7000l., it follows that under any circumstances the return upon the capital must be very large, varying from 124 per cent. upwards.

It is quite unnecessary to touch upon the prospect of the iron trade, as the ordinary supply is only equal to the ordinary demands, and there is an additional demand of at least 3,000,000 tons (two years' entire make) for English railways alone, hanging over the market. Indeed the dividend of 20 per cent., declared by the New British Iron Company at their last meeting (see the report in the *Mining Journal* of July 11, 1846), sufficiently shows the prosperity of the trade. The liability of shareholders will be limited by the deed of settlement, and by the incorporation of the company to the amount per share to be called up—viz: 6l. per share. For a more full detail see the prospectus and estimates, and sections and specimens of the minerals, may be inspected.

Applications for shares, with a reference in the usual form, may be made to Mr. T. Thomas, mining agent, 80, Old Broad-street; to the secretary, S. P. Harris, Esq., at the offices of the company, 23, Threadneedle-street; and to the solicitor, W. M. Wilkinson, 44, Lincoln's Inn-fields.

BANWEN IRON COMPANY, GLAMORGANSHIRE.—

APPLICATIONS FOR SHARES in this company will not be RECEIVED later than Saturday (THIS DAY), the 12th inst.—Immediately after which the allotment of shares will be made. By order of the directors, S. P. HARRIS, Secretary.

METROPOLITAN IRON AND STEEL COMPANY.

Provisionally Registered, pursuant to 7 and 8 Vic., c. 110.
Capital £200,000, in 10,000 shares, of £20 each.—Deposit £3 per share.

Many parties have of late been before the public under somewhat fair auspices of success, but which have eventually turned out mere speculations, or the sole benefit of some private parties. The promoters, however, of the Metropolitan Iron and Steel Company, assert, that no such end is here contemplated, and that nothing whatever of a speculative character attaches to this undertaking, but that it is based practically on the most sure and solid foundation.

That there are good grounds for establishing a company for the manufacture of the above, it may be mentioned, that at the present time some parties are most successfully engaged in the manufacture of iron, partly from scrap, &c., but who, either from want of capital or knowledge, or both, have never been able to carry out the principle to the extent to which the promoters are confident it is applicable.

This project, through improvements which can be made in the manufacture of iron and steel, is such as to warrant the production of an article of a very superior quality, as compared with that now in general use, produced from the mining districts; and the immense profit which can be realized from its manufacture, gives it every claim to that support which the importance of its character demands. The promoters have, therefore, determined to bring their object before the public; and in order to carry out to the fullest extent the manufacture of iron and steel, of the best qualities, from scrap, cast, or any other description of low-priced old iron, it is intended to form a company, whose means shall be sufficient for every purpose required.

It is an admitted fact, that iron and steel made from scrap, &c., are at the lowest estimate 20 per cent. more ductile and durable than that made in the ordinary way in this country, which is of itself a considerable advantage; but, independent of this, it is quite certain that, by pursuing the mode proposed to be adopted, very excellent merchantable iron will be made from the most inferior scrap or refuse, of which London alone is capable of furnishing a most abundant supply.

The object of the company is to establish a manufactory or works, with the requisite improved furnaces, which, by the new processes contemplated, shall produce a better description of manufactured iron than has yet been introduced from the mining districts, not only for scientific, engineering, mechanical, or any other purpose, for home consumption, but also for exportation, of which the promoters feel fully satisfied they will be enabled to avail themselves. As a first-rate article will be produced, it is presumed a market will at all times be insured; and thus, by the superiority of the article manufactured, the company will be enabled from its own resources to defy competition.

If the profits upon this article of commerce were not very great, and especially upon that which is manufactured from scrap, &c., the heavy charges of carriage would almost prohibit it altogether; for in some instances it is equal to one-third of the cost of the raw material itself. According to the present plan, that charge will not be incurred—consequently, so far an entire saving in the cost of production is effected. Taking this into consideration, together with the present price of the raw material, the price of labour, &c., and the advantage to be derived from the co-operation of gentlemen practically acquainted with all the minutiae of the iron trade, the preceding desiderata will be attained, and afford such ample returns from any outlay, that the promoters refrain from stating publicly what the returns may be fairly calculated at. But those practically conversant with the profits on the manufacture of iron will have no difficulty in coming to a most favourable conclusion on this point, and will at once see that there is every prospect of this becoming one of the most successful undertakings of the present day.

Of all the trades practised in England, and in which improvements, more or less, are daily occurring, there is, perhaps, not one which should (from the circumstance of its being one of our greatest staple articles of commerce) excite our ingenuity and attention, more than the manufacture of iron. Yet it is singular that this branch has undergone less improvement than any other, and for years scarcely any advance has been made in it.

The attention of the trade is especially directed to the advantage which they would derive by connecting themselves with the company.

The American tariff has recently undergone such an extensive modification in our favour, and the import duties, especially on iron, have been so much relaxed, that the most beneficial results may be anticipated. Already a considerable rise in the price of iron has taken place in this country, since the alteration in the American tariff in our favour has become known. This is a circumstance which could not have happened more opportunely for the establishment of a company, having objects in view similar to the present one.

It might be urged, that a manufactory of iron in the metropolis could not be enabled to compete with the manufacturers in the mining districts; but, to refute this, the promoters are justified in saying, that they can effectually meet this, and even more, by having all the supply of old scrap and cast-iron, &c., on the spot, without any charge for carriage to and from town; and that the trifling difference in the cost of coal, which is the only difference in favour of the country manufacturer, is more than counterbalanced by the advantage of having all the raw material produced where it is to be manufactured.

In allotting the shares, a preference will be given to parties in the iron trade.

The list of directors, &c., will be announced in a few days; in the interim, application for shares, in the subjoined form, and any other communications, may be made to Mr. Charles Chilton, Steam Mills, 135, Old-street; or at the company's offices, 33, Moorgate-street, London.

TO THE METROPOLITAN IRON AND STEEL COMPANY.
I request you will allot me shares, of £20 each, in the above undertaking; and I agree to accept such shares as may be allotted to me, and also to pay the deposit thereon, and sign the Deed of Settlement, when required.—Dated the day of 1846.
Name
Residence
Trade or profession
Reference
N.B.—The letters of allotment are not transferable.

London:—Printed and Published, weekly, by HENRY ENGLISH, at the Office, No. 26, FLEET-STREET.
In the city of London, where all Communications and advertisements are requested to be forwarded—addressed to "the Editor"—post-paid. (September 12, 1846.)